Solar Energy Even After Sundown

Next-Generation Solar Towers May Soon Tap Sun's Energy

From above, the Solar One electric power plant in the California desert resembles an expansive glass flower, mirrors blossoming outward from its central tower like delicate reflective petals.

On a cloudless summer's day, the solar power research facility near Barstow, Calif., once produced enough electricity to power 10,000 to 20,000 homes — not much compared to today's oil and coal power plants, but enough to provide researchers with a ray of hope for solar power technologies.

On a cloudless summer's day, Solar One once produced enough electricity to power 10,000 to 20,000 homes.

Since testing was completed in late 1988, however, the plant has lain dormant, a legacy of the largest experiment ever in a solar power technology, called solar central receiver technology, developed primarily at Sandia.

But according to Greg Kolb and Jim Chavez of Solar Thermal Electric Technology Dept. 6217, a consortium of utility companies led by Southern California Edison (SoCal Edison) is plotting to turn Solar One into a newer and better solar central

(Continued on Page Four)

SEEING DOUBLE — Sandia researchers have played a key role in developing solar central receiver technology since the early 1970s. Jim Chavez (left) and Greg Kolb (both 6217) are seen here examining glass on one of Sandia's 25 x 25 foot sun-tracking mirrors, or "heliostats." Similar heliostats will be used to direct sunlight atop an upgraded solar power tower near Barstow, Calif., called Solar Two. Sandia's Solar Thermal Test Facility can be seen reflected in the heliostat. (Photo by Randy Montoya)

LAB NEWS Profiles The New Center Directors — See Page Eight

LAB NEWS

VOL. 44, NO. 7 SANDIA NATIONAL LABORATORIES APRIL 3, 1992

SUNSHINE AND FLOWERS — Pat Long of Custodial Services Dept. 3426 admires a bed of freshly blooming daffodils that heralds the arrival of spring. LAB NEWS Head Photographer Randy Montoya found this sign of the season between Bldg. 802 and the Technical Library.

New Look and More Money

Lab Directed R&D Program Dusted Off, Spruced Up

Sandia's Laboratory Directed Research and Development (LDRD) program has been rolled out to accept proposals, and this year it's a little like the new-year model of a car: The name's the same but the look is different.

For starters, there's now a single process with a designated manager: Peter Mattern of Core Competency Support 1010.

"We've also made some improvements in the administration of LDRD this year," Peter says. "In the past, for example, we have run the program with volunteers, but now we're in the process of setting up a small office dedicated to the job."

The perspective changed when President Al Narath decided several months ago to increase emphasis on the program, Peter says, and its subsequent evaluation prompted the revamping. "Al has committed Sandia to an LDRD program more in line with the direction other labs are taking and with what DOE wants," Peter says.

The refurbished LDRD program is more in line with the direction other labs are taking and with what DOE wants.

Indicative of the change, according to members of the Process Management Team (PMT) that designed the new program, is Sandia's funding for LDRD, which grew from $15 million in fiscal 1991 to $34 million this fiscal year, and is expected to reach $45 million in FY93.

A small portion of Sandia's programmatic funding is set aside each year for the LDRD program, which allows the Labs to identify and carry out research projects that focus on innovative concepts and help maintain the Labs' scientific and technical vitality.

PMT members say the program now targets three general areas for funding proposals: core competencies, strategic initiative areas, and — new to LDRD — non-programmatic work.

Proposals that fall within the first two areas get both programmatic and technical review, but non-programmatic proposals get only technical review.

Funding Is All or Nothing

Another major change in the program falls under funding. Beginning with the current call for proposals, funding will be provided at the requested level, or not at all. That change was made, PMT members say, to discourage the practice of building excess funding into

(Continued on Page Five)

This & That

Good Thing I'm Such a Nice Guy – If I weren't, I'm pretty sure I could embarrass quite a few folks around the Labs. Maybe you noticed that several issues ago we started our "this month in the past" column, in which we summarize (in one issue each month) selected Sandia news items from 20, 30, and 40 years ago. We get that info by perusing old LAB NEWS issues, and I've come across some mighty interesting photos of some of you people. If I see you around the Labs and break into uncontrollable laughter, just assume that I've come across a moldy oldie of you.

* * *

Reluctant Interviewee – When I heard several years ago that Executive VP Orval Jones (20) was building a harpsichord, I thought that would make a nice LAB NEWS feature. But when I asked him about it, Orval said something like, "You shouldn't feature Sandia managers – focus on non-managers." In fact, we like to do just that, but I still thought we should feature anyone who does something that unusual. So, I asked again when I heard that Orval had completed it, and he agreed – reluctantly. Read about it on page ten, and drop us a note at Department 3162 if you know about other Sandians – managers or non-managers – who have unique or unusual hobbies.

* * *

Sandians Aren't Turnips – They've proved that in the past by the amount of blood they've given – averaging more than 100 pints a month over the last few years, says Linda Stefoin of Benefits Administration and Employee Services Dept. 3543. But lately, Linda says, the donation record has become a bit – well, anemic. Lots of folks in our community are helped by volunteers' gift of blood, so maybe we can get the "pintage" back up. The *Weekly Bulletin* regularly prints dates, times, and places for donation, and they're also posted in various places.

* * *

Our Fingers Are Crossed – Preparing the copy for this issue was a bit of a challenge because of the many revised organization names and numbers created by restructuring. Here's hoping we got 'em all correct, because we wrote the copy before it all became official on April 1.

* * *

Coming Attraction – As long as we're hoping, we'll say we hope to have the annual State of the Labs interview in the next issue. LAB NEWS Managing Editor Charles Shirley and Media Relations Team Leader Ace Etheridge (3161) interviewed President Al Narath and Executive VPs Orval Jones and Lee Bray recently, and they had some interesting things to say about the evolving role of the Labs. If all goes according to plan – and it seldom does these days – you can read all about it on April 17.

* * *

Acronym Poisoning – That's what LAB NEWS writer John German said he was afraid he'd get after reading a recent issue of one Sandia newsletter. I wonder whether some folks will ever learn not to assume that every Sandian at birth knows every acronym ever concocted – and new ones are springing up every day. Too many people use too many unexplained acronyms in print and when speaking before groups. If the practice continues, I'll be forced to call another meeting of the Society to Outlaw Dumb Acronyms (SODA). And if the paper deluge doesn't stop around here, I'm gonna consider starting an entirely new group – the Society to Outlaw Bureacracy (SOB). •LP

'No Frills' Family Days Considered

Employees are getting a chance to say whether they'd like to see Sandia's sites have a scaled-back Family Day-type event this year. Full-fledged Family Days — with refreshments, videos, and exhibits galore — were held during 1991 in both Livermore and Albuquerque. In the past, such events have been held every five years or so.

"In recent months," says Rod Geer, Manager of Public Relations Dept. 3161, "a noticeable number of people have mentioned, in writing or during meetings with management, that Sandia ought to open its gates more often to family. Al Narath has said that he agrees with that concept."

The March 30 *Weekly Bulletin* printed a questionnaire designed to learn what employees want to do this year. Rod says, "Our decision will be based largely on results of that survey, so we're hoping lots of employees respond by the April 17 deadline."

The questionnaire listed three possibilities for 1992:

- No Family Day.
- A "no-frills" event for family and retirees during a Saturday morning in mid-October.
- A mid-October Saturday morning "Employee Appreciation Day" that would include an employee/family/retiree gathering, followed by a several-hour "no-frills" opening of the gates.

"It takes a well-coordinated effort throughout the Labs to hold a Family Day," Rod says. "Because sustaining that year in and year out would be difficult, we're suggesting a scaled-back approach as an option this year — with another option being to do nothing at all."

The scaled-back, or "no frills," approach translates essentially into opening the gates so that family members can see work places and walk around the grounds. But the various organizing committees used for major Family Days — hospitality, plant preparation, tour/exhibit planning, for example — would not be established. Organizations that prepare exhibits would not use them just for this occasion, but would have to ensure their continued display throughout the year and/or their regular use as a communications tool in dealings with customers and other contacts.

Labor-intensive events such as rocket sled and water impact facility demonstrations and outdoor computer exhibits/demos would not be held. Shuttle buses to remote sites would not be used.

Finally, it would be the responsibility of divisions and sectors to communicate with their employees about special circumstances and plans in their organizations. •

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For Help in Teaching Science

DOE/Sandia Get Thanks from APS Superintendent

Editor's Note: Albuquerque Public Schools Superintendent Jack Bobroff recently sent Energy Secretary James Watkins a letter acknowledging the efforts of Sandia Science Advisors. Here is what Bobroff wrote:

Dear Secretary Watkins:

Having reviewed the evaluation report for the first year of the Albuquerque Public Schools' component of the Science Advisors Project (SCIAD), I wish to express the appreciation of my district for the efforts of the scientists and engineers from Sandia National Laboratories in support of the enhancement of science education, K-8, for the benefit of our children.

Sustained teacher support, on site, is a rare component of any effort; support at 100 schools is exemplary. Efforts of scientific personnel to increase teacher content knowledge and comfort in teaching science, modeling of what a scientist is for children, and help in assessing how positive changes in science education can be made in our schools are making a noticeable difference in attitudes and activities. Both formal questionnaires and unsolicited letters of support attest to this.

No energy is better directed than that which seeks to increase the quality of the educational experience to the children who will be doing the nation's work in the decades ahead. We, in the nation's 26th largest school district, look forward to the continued support of the SCIAD project. The development of "can do" attitudes and the increase in the number and depth of students who are scientifically literate will help the United States compete in the next century.

Sincerely,
Jack Bobroff

Welcome

Albuquerque — Lisa Hooper (7712). *Other New Mexico* — Allen Gonzales (3426), Robert Reese (7713).

Elsewhere: *Minnesota* — Michael Kent (1813); *Texas* — Thomas Blanchat (6422).

Women Role Models

Frozen Candy, Cola Tests, Other Hands-On Projects Highlight 'Expanding Horizons' Conference

Rainy weather didn't dampen the spirits and enthusiasm of 606 young women in grades 6-12 who spent a recent Saturday at a conference called "Expanding Your Horizons in Science and Mathematics."

The program drew students from 44 cities throughout Northern California. In fact, the annual conference, co-sponsored by Sandia, Livermore, has become so popular that some 400 registrations couldn't be accepted this year because of space limitations.

The program was held at the Pacific Bell Administrative Center in San Ramon. More than 100

"Career possibilities are endless if girls take as many math and science classes as they can in high school."

Sandia volunteers helped stage the event, preparing and stuffing packets of information, setting up equipment and tables, passing out information at the Career Fair, directing students, and leading several of the 30 hands-on workshops.

Co-directors of this year's event were Sheila Akins of Component Development Dept. 8441 from Sandia and Laurlee Fry from Lawrence Livermore National Lab.

"The message of the conference is that career possibilities are endless if girls take as many math and science classes as they can in high school," says Sheila. "Students who attend the conference see women scientists who are good role models with challenging jobs and a life outside work. They see that women scientists aren't nerds or Einstein types."

GAYLE WILSON (left), First Lady of California, talks with Sheila Akins (8441), Sandia's co-chair of the Expanding Your Horizons conference.
(LLNL Photo by Jackie McBride)

This is Sheila's fourth year working at the conference. An important indicator of the program's success, she says, is that many students and volunteers return.

This year, a special guest was Gayle Wilson, wife of California Gov. Pete Wilson. She spoke from personal experience, noting that "although I was encouraged to do well in school, no one encouraged me to be good in science and math. My mother thought science was unfeminine."

Mrs. Wilson became interested in math in eighth grade when she met an encouraging science teacher. She later became a Westinghouse Talent Search Scholar, attended Stanford, and graduated in the top 10 percent of her class with a biology degree.

"Yet, not one teacher or counselor encouraged me to continue in science or to pursue it as a career," she told students. "There are a lot of jobs that need people with math and science backgrounds. Don't let counselors tell you that you only need a few math courses in high school."

Is Cola a Hazardous Waste?

Though obviously interested in what the first lady of the state had to say, students consistently reported that the hands-on workshops were the highlight of their day.

Kim Mahin (8312), a welding metallurgist, and Jane Ann Lamph (8483), a mechanical engineer, attracted interest with their program called "Metal Mania." The demonstration explored the properties of materials and their application to designs such as the Space Shuttle and rapid transit systems.

Kim changed the properties of soft, flexible gummy bears by freezing several pieces of the candy in liquid nitrogen. Not everyone was as willing as she was to eat them once they splintered like glass into hardened fragments.

Jane Ann asked students to sort various metals by weight and showed them that weight and strength can't always be estimated based on appearance.

Other students gave high marks to a workshop on "How Things Work" led by mechanical engineers

"Students see women scientists who are good role models with challenging jobs and a life outside work."

Ellen Meeks (8245) and Beth Fuchs (8246) and structural engineer Vera Revelli (8242). They prepared five hands-on projects to help the girls learn scientific principles that apply to everyday life.

Another hit workshop was led by Sandia engineer Kim Shepodd (8542), whose program was titled "Coca-Cola — A Hazardous Waste?" She did an experiment that tested whether a soft drink dissolves enough metal to classify the solution as a hazardous waste. (It doesn't, though cola does contain phosphoric acid, which would be problematic in larger quantities.)

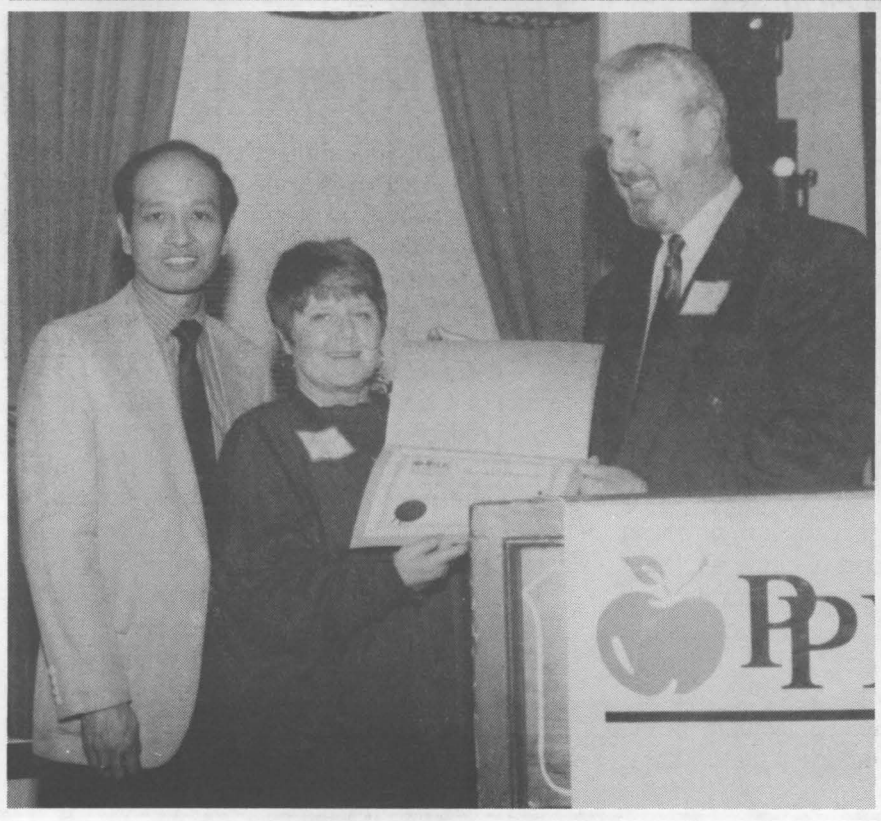
DEMONSTRATING HOW STEAM from a can of heated water can rotate the can in mid-air using directional tubing is Vera Revelli (8242), who led one of the hands-on workshops for girls.

In other workshops, students designed a new town, explored how electricity flows through a bulb to produce light, discussed risk analysis, learned the principles behind bone marrow transplants, and wrote a short computer program.

Meanwhile, about 60 parents and educators attended separate programs on college financing, college selection, and why math is important to girls.

Sandians who chaired committees for the event include Lois Johnston (8316), Gloria Christensen (8300E), Mary Rivenbark (8534), Alice Johnson-Duarte (8542), Kristy Sibert (8534), Susan Crawford (8316), Karen Lee (8316), and Celeste Rohlfing (8341). Sandians who participated in the Career Fair booth include Mary Clare Stoddard (8441), Charlene Schaldach (1932), and Christine Yang (1913). ●

SANDIA LIVERMORE NEWS



SANDIANS RECEIVED two awards from Pleasanton Partnerships in Education (PPIE) for programs involving school science carnivals and School Links volunteers. Accepting the awards are Ray Ng (left, 8445) for the Science Carnivals he coordinates in Bay Area schools, and Cindy English (8522) for coordinating the School Links program. Pleasanton Mayor Ken Mercer presented the awards. Four Sandians who volunteer in Pleasanton schools on a regular basis are Celeste Rohlfing (8341), Liz Cox (8360), Howard Royer (8512), and Victoria Levin (8541). Science carnivals have been held this year at Pleasanton Middle and Valley View Elementary schools.

(Continued from Page One)

Solar Tower

receiver plant called Solar Two. The new plant, they say, will be able to generate electricity more efficiently than Solar One during intermittent cloudy weather and after sundown, thanks to a new, more efficient heat storage capability developed by Sandia and industry.

"We believe solar central receiver technology is now ripe for commercial use," says Jim, "but someone must first step in and show that a commercial plant will deliver electricity that is cost-competitive and reliable. Solar Two should validate the new heat storage technology and pave the way for utility companies to invest in solar power."

Field of Heliostats

Solar One worked like this: hundreds of 20 x 20-ft. heliostats (essentially sun-tracking mirrors) reflected sunlight onto a receiver atop a 300-ft. central tower. The focused sunlight heated water inside the receiver, producing high-pressure steam that drove a steam turbine on the ground, which produced electricity. Some heat energy was also stored in oil- and rock-filled tanks so that electricity could be produced at night and during partly cloudy weather.

Built in 1982 and operated until 1988, Solar One demonstrated that solar central receiver technology could tap the sun's energy to produce electricity without polluting the environment, says Greg. "It also taught us lessons in how to improve the efficiency of future plants and thus lower the cost of solar electricity to consumers," he says.

But Solar One also focused researchers' attention on a few inherent problems with the technology. First, when a cloud passed over the heliostat field, energy production essentially stopped. Second, electricity couldn't be produced at night very efficiently, because the heat storage system was too complex and inefficient.

For the last 15 years, researchers at Sandia and elsewhere have been studying ways to remedy these problems by learning how to store solar energy more efficiently. The solution: use molten nitrate salt instead of water.

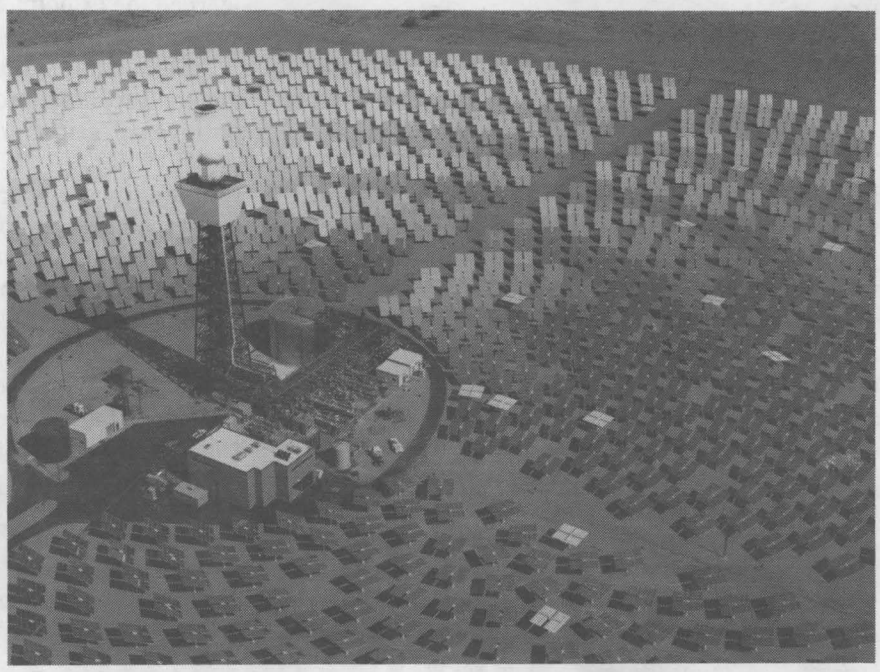
The molten salt substance — similar to the chemical saltpeter — has ideal properties for storing solar energy, says Greg. It's inexpensive, it's non-hazardous, it can withstand extremely high temperatures, and it stores heat energy much more efficiently than the substances used in the Solar One storage system. When hot, the salt flows like water, and it can be stored in insulated holding tanks for hours without losing a significant amount of its heat energy.

At Solar One, when a cloud passed over the heliostat field, energy production essentially stopped.

"We found that molten salt can be heated and used to turn water into steam very efficiently," he says. "When it gets dark or the sun goes behind a cloud, you can draw on your energy reserves."

Because of these properties, predicts Jim, a

(Continued on Next Page)



SOLAR ONE, a solar research facility near Barstow, Calif. (seen here), will soon be upgraded and appropriately renamed "Solar Two" by members of a consortium of Western US utility companies. During the peak of its operation, Solar One produced enough electricity to power 10,000 to 20,000 homes. The upgraded solar power tower is expected to validate several new solar technologies and pave the way for utility companies to invest in solar central receiver power plants.

Desert Power Parks

Bright Forecast for Solar Power

Imagine a vast solar power park in the Nevada desert. Several power towers and heliostat fields supply electricity to hundreds of thousands of homes and businesses across the Western US. Electricity produced in the Southwest would be wired to cities such as Seattle, where frequent sunless days prohibit the use of solar power. Heat energy stored in tanks could supply power even at night.

While desert power parks may seem strange, they're just one way solar central receiver technology developed at Sandia and elsewhere could be used by utilities to reduce emissions and meet increasing energy demands in the US, says Greg Kolb (6217).

Another scenario, he says, is using solar power generated in the desert to "juice up" electric cars in the cities. For several reasons, including reduced air emissions, the city of Los Angeles wants 70 percent of all new cars sold in the Los Angeles basin to be electric by the year 2010, says Greg.

But electricity used to charge electric cars is still generated by gas or coal plants outside the cities, and air pollutants will still be produced by these plants. Although emitting pollutants away from population centers is preferable to emitting the pollutants from tail pipes within cities, electric cars still indirectly produce emissions. Solar power plants could be used to handle the extra energy needed to charge electric cars, thereby turning electric cars into truly clean solar-powered cars, says Greg.

"The US's dependence on foreign oil and the increased use of natural resources have become national security issues," says Jim Chavez (6217). "Clean, renewable energy is now a necessity, not a luxury." These and other scenarios, he says, forecast a bright future for solar power technologies.

Leveling the Playing Field

Solar vs. Fossil: Different Fuels, Different Costs

Many utility companies still think solar power is risky business. Oil and coal prices remain low, fossil fuels are the status quo, and many new solar technologies haven't been successful in the past ten years, says Jim Chavez (6217).

But recent concerns about the long-term availability of fossil fuels, renewed environmental worries, and uneasiness of politicians about the nation's dependence on foreign oil have put alternative sources of energy at the forefront again, he says.

"In the '70s, the biggest concern of power companies was the high cost of crude oil," says Jim. "But when oil prices dropped back down in the early '80s, utilities had no economic incentive to develop solar technologies." Today, however, the environment is the focus, he says. "Industry and government are beginning to factor in the environmental costs of burning fossil fuels." These costs include emission of carbon monoxide, volatiles, and carbon dioxide (a major contributor to global warming). Coal power plants also emit sulfur dioxide and nitrous oxides, which are linked to acid rain.

Factoring It In

Sandia researchers predict that with today's technology, a 200-megawatt central receiver plant could produce electricity for only 1 or 2 cents per kilowatt-hour more than coal plants of similar size. Pending technology advances, including new types of stretched-membrane heliostats, will narrow that gap even more.

In addition, some state governments have initiated incentive programs that force conventional coal and oil plants to pay for environmental damage. In Nevada, for instance, a utility company that wants to build a new coal power plant must add 5 cents per kilowatt-hour to the price of electricity to pay for environmental damage. The net effect is what's called an "environmental equalizer" that makes solar technologies a lot more attractive to companies evaluating types of power plants, says Greg Kolb (6217).

In other states, "tax equalizers" are being given to utilities that use solar power, says Greg. "The current tax structures often force solar power plants to pay more in taxes than conventional power plants," he says. "Tax equalizers tend to ease that burden.

"Such programs are necessary to level the playing field for solar technologies," he says. He predicts that with equalizers and technology advances in place, solar energy could become less costly than other sources of electricity. "We're not saying solar energy is cheaper than other sources of energy right now, but we're within 25 percent and closing in fast. We think people are willing to spend a little more for clean power."

(Continued from Preceding Page)

Solar Tower

full-scale solar central receiver plant using molten salt technology could be made to operate cost-effectively during 60 percent of the year.

Still Perceived as Risky

Unfortunately, many utility companies doubt that solar power plants can compete economically with conventional sources of electricity (see "Solar vs. Fossil: Different Fuels, Different Costs" on page four). One reason, says Greg, is that it costs more to build a solar plant than it does an oil or coal plant, mainly because manufacturing heliostats is expensive. What's often not considered, however, is that the fuel for a solar power plant is free. "It's like buying a new car with 30 years worth of fuel already in it," he says. "In the long run it's cost effective, but it costs more up front."

More than a year ago, Jim, Greg, and Dan Alpert (6216) launched a campaign to try to convince utilities in the Southwest that solar central receiver technology is a sound investment. The plan worked.

SoCal Edison, along with the other members of the consortium (now including nine utility companies in California, Arizona, Idaho, and Utah), plans to retrofit the Solar One plant with a new molten salt system during the next year. The plant should be on-line in late 1994, predicts Greg.

DOE will be a partner in the project by halving the cost of the upgrade with the consortium. Sandia will provide technical assistance, including reviewing the plant's design and construction and helping resolve technical issues.

The upgrade will include the addition of about 100 new, larger heliostats, a new receiver, a thermal storage tank system including hot and cold salt tanks, and a new salt-to-steam generator. The upgrade will use the existing Solar One tower, heliostats, turbine, and a portion of the control system.

"It's like buying a new car with 30 years worth of fuel already in it. In the long run, it's cost effective."

Once Solar Two is up and running, consortium members will share the electricity produced — approximately 10 megawatts, enough to power 10,000 to 20,000 homes with a four-hour storage capability. Although this amount is relatively small compared to 100- and 200-megawatt conventional power plants of today, Jim and Greg say it's the first step toward a new energy future (see "Bright Forecast" on page four). In addition, they say, Solar Two will lead to improved cost projections for large-scale solar power plants.

"This group of companies is taking the initiative in building an energy future that doesn't rely on foreign oil, that doesn't harm the environment significantly, and most importantly, that relies on a limitless source of fuel — the sun," says Jim.

Technologies for Solar One and Two have been under development at Sandia, Livermore and Sandia, Albuquerque since the early 1970s. "The Sandians involved in helping develop these technologies are too numerous to mention," Greg says. "Suffice it to say that we are now building on their contributions to produce newer technologies that should lead to a renewed, more positive outlook on energy resources in the near future."

Greg says the Solar One upgrade is a significant milestone toward building a 100-megawatt commercial solar power plant by the end of this decade and toward developing and building a plant twice that size during the next decade. "Solar Two is the first step toward commercializing solar central receiver technology," he says. •JG

(Continued from Page One)

Lab Directed R&D

LDRD budget requests.

Here are some other major changes in the LDRD program:

- Targeted technology areas and funding levels are announced so researchers have a feel for the appropriateness of their projects before submitting them for review.
- As part of the technical review, lead principal investigators will be required to make a 10-minute oral presentation on their proposals and participate in a discussion with the technical review team members.
- Each proposal must list as a milestone the publication of a final SAND report on the project's results. These reports also will serve as LDRD program feedback to DOE.

Timetable for Laboratory Directed R&D Proposals

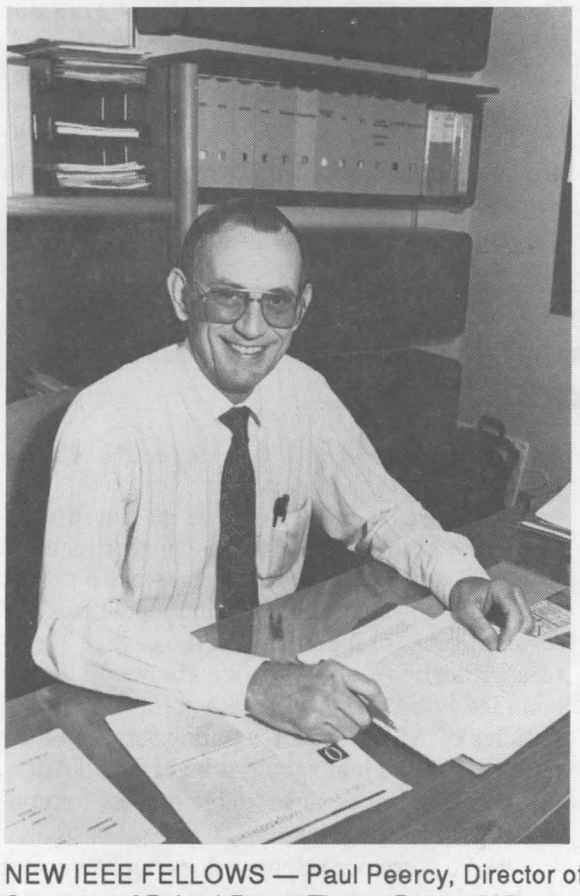
April 24	Centers submit proposals to LDRD office.
May 1	LDRD office logs and distributes proposals for technical review.
May 20	Technical reviews completed.
May 22	LDRD office logs and distributes proposals for program review.
June 5	Program review completed.

After the LDRD plan is prepared, it will undergo a DOE review, probably in June. Feedback to proposal submitters will take place within three weeks after the DOE on-site review.

Peter says each manager at Sandia has received a package containing detailed instructions on how proposals should be prepared and submitted.

Paul Fleury, VP-1000 and chair of the LDRD Council, praises the PMT members for their "hard work and excellent results. This group has not only devised a fair, uniform, and streamlined process from which all of Sandia will benefit," he says, "they have also performed as a team in ways we should all seek to emulate."

Members of the PMT who helped shape and define the LDRD changes, in addition to Peter, are: Linda Benavides (143), Ernie Brickell (1423), Ron Diegle (2523), Jim Gerardo (1120), Duane Lindner (8310), Bob Luna (6603), Ed Kozlowski (1000), Phil Montoya (9012), Del Owyoung (1310), Steve Rottler (1511), Rick Stulen (8342), Suzanne Weissman (6000A), David Williams (6429), and David Womble (1422). •HK



NEW IEEE FELLOWS — Paul Peercy, Director of Microelectronics and Photonics 1300, and Mary Ann Sweeney of Pulsed Power Theory Dept. 1625 were recently named Fellows of the Institute of Electrical and Electronic Engineers (IEEE), an honor reserved for 1 percent of the Institute's 300,000-person membership. Paul was selected for his contributions to ferroelectric materials and device research and for his contributions to and management of strained-layer, compound semiconductor device programs. Mary Ann was selected for her technical contributions in the areas of plasma opening switches and beam interactions with matter in particle beam accelerators.

Congratulations

To Grace and Kyu (344) Paek, a daughter, Yuri Crystal, Feb. 19.

To Priscilla (3532) and James Altsisi, a son, Matthew James, Feb. 29.

To Donna and Randy (6233) Cygan, a daughter, Katharine Adele, March 14.

To Mary (1511) and Larry (9230) Walker, a son, Will Patrick, March 15.

To Betsy (3532) and Steve (7711) Parker, a daughter, Kelsey, March 17.

To Peggy Clews (1841) and David Beutler (9341), a daughter, Rebecca Esther Beutler-Clews, March 17.

To Sherrye (21) and John (9514) Lavasek, a daughter, Cindy, March 18.

To Debbie and Randy (5161) Harrison, a daughter, Heidi Lynne, March 20.

Sympathy

To Carmie Thompson (2364) on the death of her father in Greenup, Ky., Feb. 16.

To Tony Cordova (2482) on the death of his mother-in-law in Albuquerque, March 16.

To Tom Corbet (6344) on the death of his father in New York, March 17.

To John Guth (7712) on the death of his father in Albuquerque, March 23.

Inviting 1,900 to Lunch

Brown Bagging with Brass Begins Its Third Year

Brown Bagging with Brass, Sandia's regular question-and-answer luncheon sessions with upper management, has celebrated its second birthday.

The program involves inviting randomly selected non-supervisory employees — usually 20 to 25 at a time — to have lunch with a member of the Sandia Management Council (SMC). It began in response to employee comments recorded in the 1989 Employee Communications Survey. So far, almost 1,900 employees have participated.

"The 1989 survey clearly showed," says Rod Geer, Manager of Public Relations Dept. 3161, "that employees wanted more information about long-range plans and future prospects, more opportunities to express feelings about the impact of new practices and policies on their jobs, and more opportunities to talk directly — one-on-one, if possible — with upper management about these matters."

"The moat between upper management and staff is getting smaller because of efforts like this."

Brown Bagging with Brass and similar programs begun at the division, sector, or center level seem to be achieving that, particularly when viewed in the context of results from last year's all-employee survey.

"Although issues of concern abound in survey results, I like to point out the positives whenever possible," Rod says. "One from last summer's *Sandians' Perspective* survey is that 63 percent said that in the past year or so communication at the Labs has changed for the better or stayed the same, and is generally good."

Rod, who with Herb Pitts, Director of Information Services Center 3100, first approached members of SMC about starting Brown Bagging, has saved all written comments from employees who have attended a session. "This program has been highly satisfying for those who've participated. In addition, there's been some useful input on how to fine-tune the proceedings," he says.

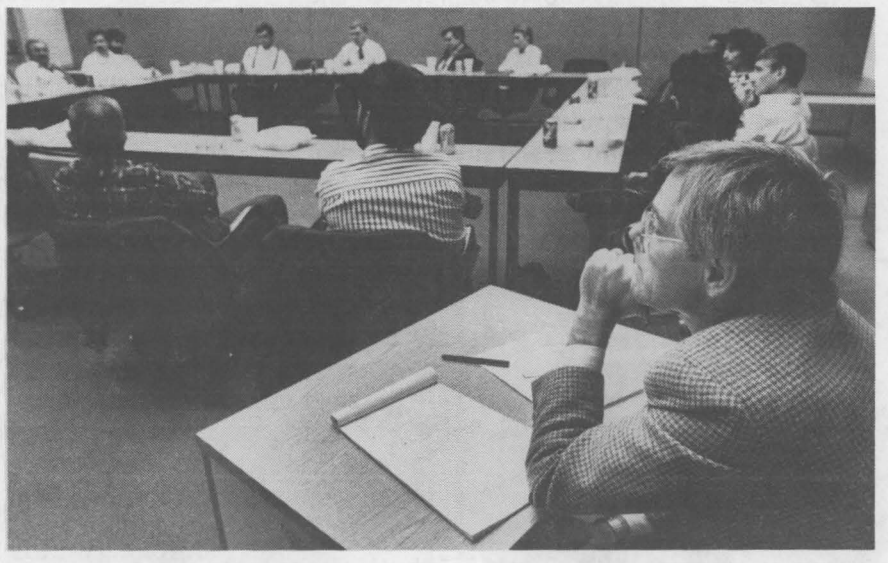
Questions Are Deeper Now

The Sandians who answer most of the questions at Brown Bagging with Brass — members of SMC — remain high on the program.

"It's always been a lot of fun for me," says Dan Hartley, VP-6000. "In the early days, questions almost seemed as if they were coming from people who didn't work at Sandia. Today, however, questions are deeper. People are more informed."

Roger Hagengruber, VP-5000: "We started this with the belief that it'd be a valuable communications tool. That's true. It's been exceptionally useful for me to hear from others. Probably the most persistent questions have been ones involving personnel policies — enhanced retirement possibilities, secretarial issues, rumors of personnel actions."

"The strongest impression I get from these sessions," says Paul Robinson, VP-4000, "is that there are issues people feel very strongly about, but for some reason we in management haven't found a good conduit through which to hear about and discuss the issues. So, I get hit with those concerns at Brown Bagging sessions — questions about affirmative action, questions about why management doesn't display more fiscal trust of employees. Thus I find the sessions very useful and hope others do also."



TAKING NOTES — Rod Geer (3161) observes a recent Brown Bagging with Brass session to hear a sample of what's on Sandians' minds and to follow up if further information is needed to answer a question. Brown Bagging sessions usually involve 20-25 employees meeting with a member of the Sandia Management Council.

Frankness and Humor Prevailed, Say Brown-Bagging Participants

The following comments (used with permission) are typical of those made by employees who attend Brown Bagging sessions:

"I felt that our discussions were quite frank. While we didn't solve any problems, we did seem to gain some common understandings of the challenges that we, as a company, are facing."

Ken Erickson (1512)

"I appreciated how much information was conveyed. He [the VP] had a good sense of humor and style of conveying information."

Rudy Matalucci (6257)

"It was nice to see upper management listen to our concerns and try to offer some real answers in the wake of an ever-changing Sandia Labs. People like to be heard . . . it breaks down the communication barrier."

Sophie Garcia (4540)

Heinz Schmitt, VP-2000: "It really provides me an opportunity for personal interaction with employees from a cross section of the Labs that I just can't get any other way. It also seems that since we started these meetings, people participating in them have become more open. The moat between upper management and staff is getting smaller because of efforts like this. It's imperative that we continue, even if my answers aren't always as good as I'd like them to be."

Says Gerry Yonas, VP-9000: "Every time I'm at one of the sessions, I go away pumped up with new energy that comes from first-hand interaction with some of the most talented people in the country."

"I hold these sessions in high value," notes Executive VP Lee Bray (30), "and, in fact, have started similar ones specifically for employees in organizations that report to me. The sessions offer the opportunity to regularly emphasize the importance of implementing our Strategic Plan through discussion of current issues. And I've never felt I was appearing before a hostile audience."

Despite its success, Rod says some changes are being considered for Brown Bagging with Brass. "There are logical spinoffs, such as offering employee tours of high-profile facilities or operations." •

feedback

Q: We use a system for our SAND report numbers that is not good for our image, it seems to me. The system is that we assign SAND numbers identifying the year in which the number was requested; for example, SAND89-1234 might be given in 1989. The problem is that by the time we actually publish the report, the actual date of publication has changed and is also identified. Thus, SAND89-1234 might not be published until May 1991. This makes it clear that we were slow because we took two years to publish, which does not look so good even though it is true. Pointing this out to the people who supply SAND numbers resulted in the response that the number can be changed to the current year. However, the original number is often used as a reference number on "to be published" lists, after which it is not practical to change to a new number. Why don't we just start counting from some number?

A: Your question is timely and valid. Assignment of a SAND report number is part of the document Review and Approval process, which is currently being studied by a Review and Approval Quality Action Team (QAT) comprising a cross section of Sandians.

The SAND report number includes the year of issue to allow easy retrieval of old document information from a personal computer-based information system. Changes to this procedure will be considered as part of the QAT review. Your suggestion has been forwarded to the team, and you will be invited to participate in focus group studies of the review and approval process.

Herb Pitts (3100)

Q: The requirement for a division supervisor's signature on shipping documents seems unnecessary and disempowering. This is especially true for those who are not located in the same building as their supervisors. In my case, I must travel from one end of Tech Area 1 to the other to get my supervisor's signature.

A: Please be assured that we are not insensitive to the problems and inconveniences incurred by employees when following established policy. There are, however, sound business practices and legal reasons for the policy. In the case of signature authority on shippers, we are bound by our contract with DOE to follow the property control policies of AT&T. AT&T's policy sets signature authority at the management level. In addition, this policy provides an auditable process for control of government property.

We're sorry our response does not solve your problem, but we do appreciate your inquiry. It is Sandia's objective to reduce administrative impediments whenever and wherever possible. Comments and questions by employees ensure that we continue to pursue this objective.

Paul Stanford (100)

Valuable Services in Changing Times

Tech Libraries Help Meet Sandians' Changing Info Needs

These days, evolving research focuses, tighter budgets, and stricter deadlines mean many Sandians need a convenient place to get new and relevant information for Labs work. That's where Sandia's Technical Libraries in Albuquerque and Livermore can help, says Jennie Negin, former Manager of Technical Library Dept. 3140.

"Times are changing," says Jennie, "and Sandia's Technical Libraries are committed to adjusting to the changing needs of the Labs. We want to provide the most valuable information services possible and show that we really can add to the bottom line."

Several Library initiatives and a continued focus on customer service mean Sandians are more likely to get the information they want when they need it, she says. And in a time when Labs research is changing its focus, the Library can also help Sandians learn new fields or reapply their skills in other areas. This can save Sandia money and lead to new opportunities for work. "The library can be a partner in Labs work," she says.

In addition, special collections are now available that contain up-to-date information about Labs initiatives such as quality and project management. And new computer capabilities can help bring information right to a researcher's desktop. An extensive interlibrary loan service also expands Library capabilities far beyond the walls of Bldg. 804 (Albuquerque) and Bldgs. 921 and 912 (Livermore), she says.

As part of its customer service initiative, the library staffs in Livermore and Albuquerque recently surveyed several Very Important Customers ("VICs" for short) about their experiences using Sandia's Technical Libraries. Here's what a few of them had to say:

Bernie Zak, Risk Assessment and Transportation System Analysis Dept. 6321: "I often get requests for analysis in areas that are vaguely familiar to me. I have from one to six weeks to come up with expert judgment. Without competent Library services, this would be very difficult. Last year, a team of 15 Sandians was asked to evaluate likely consequences of certain Hussein actions in the Kuwait oil fields. Library information helped us go from request to report to the White House in six weeks."

Ed Graham, Director of Facilities Operations and Maintenance Center 7800: "I use the Library to keep abreast of new initiatives — Quality, management, the way we solve problems. When I find a book that really hits home on issues of the workplace, I depend on the Library to get my personal copy as quickly as I might need it."

Art Trujillo, Manager of Best Practices Benchmarking Dept. 4313: "The Library has been valuable to us in Benchmarking. Having information at our desks instead of having to go to folks saves travel time and money. The Library also enables us to do homework and gain valuable insights about companies (called corporate intelligence). This will play a tremendous role in Sandia's future. I never realized what a valuable resource was sitting right in the middle of this company."

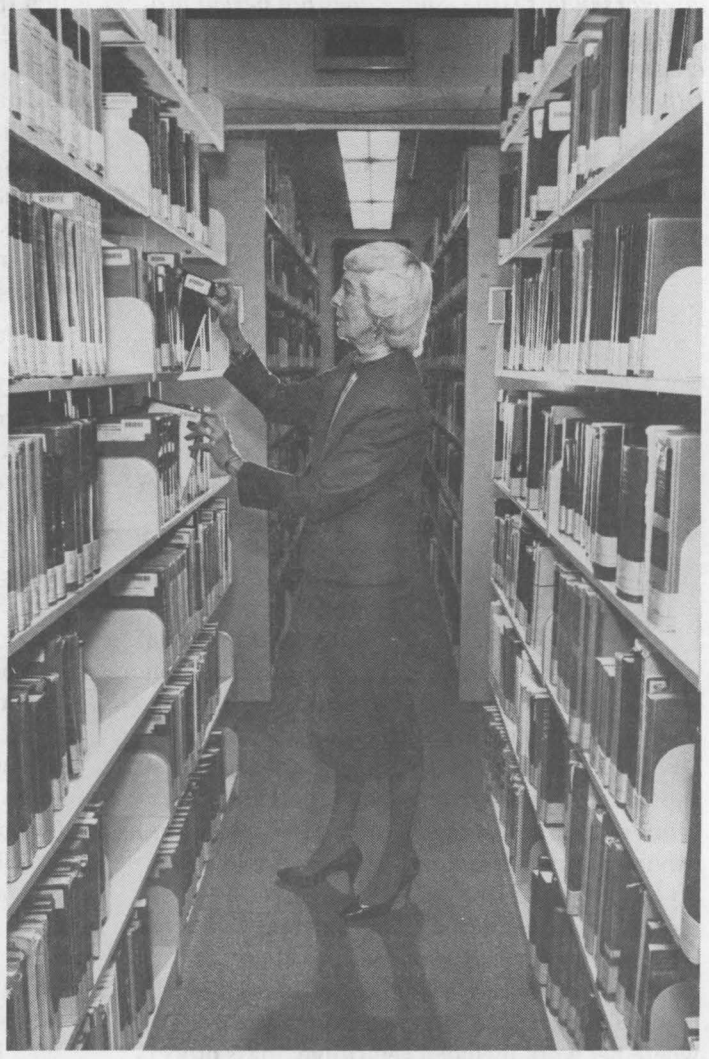
John Vitko, Program Development Org. 8300A: "Sandia is quickly becoming a significant contributor to the nation's global climate change research program. Because this field is changing and developing very rapidly, the ability to access information quickly is critical. During the past two years, the Livermore Library has provided many useful profiles and searches of engineering and meteorological literature, often with only one or two days notice. This has allowed members of our staff to contribute in a timely and effective way to a variety of forums and programs."

Judith Mead, ES&H Customer Representative Manager 7203: "One of the things that came up at a recent *Sandians' Perspective* cabinet meeting of VPs, directors, and managers was the usefulness of the *Management Newsletter* distributed by the Library. Many people said they are appreciative of the newsletter, often request journal articles from it, and feel it is an outstanding service to Labs management."

Walt Herrmann, Director of Shock Physics Research Center 1600: "The Library provides dozens of journal articles that I use to establish the theory underlying the way materials deform for computer modeling research. This is paying off in a real way. Putting my own work together with what others have published is giving us new and more accurate ways of modeling many materials. The Library supports similar research of many different problems across the Labs — solid mechanics, fluid mechanics, shock wave physics, space shuttle debris shield modeling, and reactor safety work."

Nina Bergan, Technology Application Dept. 5377: "Through a literature search recently, the Livermore Technical Library supplied information that helped us understand what the Environmental Protection Agency and industry were doing to measure metal aerosol emissions. We found that emissions compliance could be improved by developing a continuous monitoring technique for metal aerosols, work which is well-suited to Sandia's expertise. This critical knowledge gave our efforts immediate direction and provided background information for our proposals."

Dick Jones, Electromagnetic Analysis Dept. 2753: "During one project — called the 'archaeology' project because we were 'digging up' records from the past — we were looking for anything ever written about stockpile-to-target sequence. I had my own desk in the vault [the location of the Library's records collections]. The support from the Library was really outstanding. Four library staff members worked with me. As a result, I did several years worth of work in just one year. After seeing all that goes on behind the scenes, I know the Library is a valuable asset." •



STACK SEARCHING — Library Assistant Liz Kuehl of Technical Library Processes Dept. 3141 selects a volume at Sandia's Technical Library in Albuquerque. Although books are still an excellent source of information, electronic media and technical journals are Sandians' staple information sources these days.

Calling All Library Customers . . .

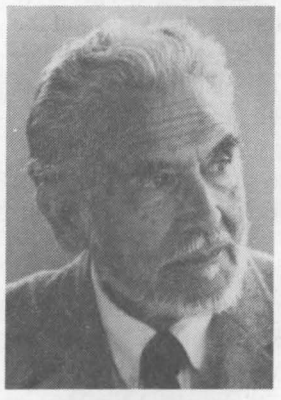
The Sandia, Albuquerque Technical Library has selected National Library Week, April 5 through 11, to showcase its capabilities and services. An Open House will be held Wednesday, April 8, from 1 to 4 p.m. in Bldg. 804. All Sandians are welcome.

Some of the Library's "VICs" (for "Very Important Customers") will act as docents and be available to share with visitors how the Library has helped them with Labs' work. Several exhibits will also be displayed. In addition, local book vendors will be on hand so that Sandians can test out a brand new Library service — employees can now use their Sandia credit cards to procure books from bookstores directly.

Environmental Ethic

Physicist Albert Baez to Speak at Sandia

Albert Baez, a physicist whose work in X-ray optics is world-renowned, will speak at Sandia on Wednesday, April 8. He will discuss "An Environmental Ethic: Respect and Affection for the Earth" at 10 a.m. in the Technology Transfer Center (Bldg. 825).



ALBERT BAEZ

Baez, who is the father of folk singer Joan Baez, did research in X-ray optics at Stanford University together with Paul Kirkpatrick that opened the way for X-ray imaging microscopes and telescopes.

Although the Earth fosters life, Baez says, large human populations and powerful technology have combined to wreak havoc on air, water, and soil. Technology can be used constructively, but humans have to be educated into curiosity, creativity, competence — and compassion.

In addition to having taught physics at Stanford, Baez has been involved in addressing environmental issues worldwide, done innovative work in curriculum reform, and promoted self-help through science-based education and community projects. He received the Chairman's Award at the 1990 Hispanic Engineer Achievement Awards and is currently president of the US branch of the Swiss humanitarian and education foundation Vivamos Mejor (Let Us Live Better).

While in New Mexico, Baez will also be the keynote speaker at two "Share Fairs" in Grants and Cochiti, workshops designed to help teachers and science advisors develop innovative ideas for classroom instruction in science and mathematics. •

Profiles of Sandia's New Center Directors

The LAB NEWS begins profiling Sandia's new directors in this issue. Space does not permit profiling all new directors (most are new positions created as a result of restructuring) in this issue. Others will be profiled in the next few issues.

DORIS MILLER to Director of Nuclear Waste Management Center 6300.

"I'm looking forward to becoming a part of the outstanding work that Sandia is doing in nuclear waste management and hope to facilitate the application of that expertise to new areas of need as world events present opportunities," says Dori.


DORIS MILLER

Dori came to Sandia in 1978 as a member of the Vibration and Modal Testing Division, where she did structural dynamics diagnostics testing. She transferred to Applied Mechanics Division IV on a rotating assignment in 1980 and did structural analysis and environments engineering. She returned to the Vibration and Modal Testing Division in 1981. Dori was also on loan to the Field Test Organization for six months to develop a data reduction system for field instrumentation trailers.

She was promoted to Supervisor of the Climatic, Centrifuge, and Devices Testing Division, where her work included centrifuge, mass properties, climatic, and electrical functional testing. In 1988, she transferred to Sensor Systems Division V, where she developed electromechanical systems and sensors for intrusion detection, access control, and battlefield management. In 1990, she was on special assignment for three months to the DOE Office of Arms Control in Washington, D.C., to help with strategic planning. Dori was promoted to Manager of the Experimental Mechanics Department in 1990.

She has a BS in mechanical engineering from UNM and an MS in mechanical engineering from UNM through Sandia's One-Year-On-Campus program.

Dori enjoys tennis and vocal music. She has three children and lives in NE Albuquerque.

* * *

MELODIE OWEN EYSTER to Director of Financial Services Center 150.

"I'm looking forward to my new position and the opportunity to work with another highly talented group," says Melodie. "We have numerous challenges in meeting our customers' needs both internally and externally, while facing increasing demands on our resources. One of our major initiatives involves bringing up a new financial system while ensuring a smooth transition and integration with other systems. I look forward to working with folks throughout the Labs in accomplishing this."


MELODIE OWEN EYSTER

Melodie joined Sandia in 1979 as a staff accountant in the General Accounting Division. In 1981, she joined the Financial Policies and Procedures Division, where she was an analyst and acted as DOE liaison. She transferred to the Joint Receipts Tax Division in 1982 and negotiated a $270 million tax settlement for Sandia and several other DOE contractors, working with attorneys from Sandia, DOE, and the New Mexico Taxation and Revenue Department. She received a commendation from DOE for that work. In 1983, she joined the Management Information and Results Division, where she monitored budget/costs of the Military Application programs for reporting to Sandia management.

Melodie was promoted to Supervisor of the Payment Processing Section in 1984. While there, she assisted in a major conversion project for the Integrated Procurement System and consulted on Gross Receipts Tax problems. In 1985, she was promoted to Supervisor of the Finance Division. In 1987, she was named Assistant to the Vice President of Research and was promoted to Manager of the Accounting Department in 1989. She went to the Audit Department in 1990 and then to the Budget Department later in 1990.

Melodie has a BBA and an MBA in accounting from Eastern New Mexico University and holds a CPA certificate. Before joining Sandia, she worked for Rogoff and Youngberg, CPAs, in Albuquerque. She is a member of Phi Kappa Phi Honor Society, member and past president of the American Society of Women Accountants, and past chair of the New Mexico Accounting and Management Seminar Board. Melodie is chairperson of the annual Employee Contribution Plan Campaign for 1992.

She enjoys tennis, ballroom dancing, calligraphy, and stained-glass art. She and her husband Gary live in the NE Heights.

* * *

ALTON ROMIG to Director of Materials and Process Sciences Center 1800.

"I'm excited about the formation of the new Centers at Sandia," says Al. "It will be a wonderful experience in building new teams. The development of a new business style and the development of a new and evolving customer base will be an adventure."


ALTON ROMIG

Al's Sandia career has been in the Labs' Metallurgy Department since he joined the Physical Metallurgy Division in 1979. His work has been primarily in diffusion-controlled microstructural evolution and advanced microstructural characterization, primarily for assessing weapon component reliability.

Al was promoted to Supervisor of the Physical Metallurgy Division in 1988 and was named Manager of the Metallurgy Department in 1990. He was a member of Sandia's Quality Improvement Team, the Phase II Strategic Planning Committee, and the Management Restructuring Team. He is currently serving on the DOE Technology Assessment Selection Panel for uranium alloys.

Awards he has received include the ASM-MSD (American Society for Metals/Materials Science Division) Research Award in 1992, given to outstanding mid-career materials scientists; and the K.F.J. Heinrich Award in 1991, given by the Microbeam Analysis Society to outstanding scientists under age 40. He was elected Fellow of the American Society for Metals in 1990. In 1988, he received the Burton Medal, awarded by the Electron Microscopy Society of America to outstanding scientists under age 40.

Al has BS, MS, and PhD degrees in materials science and engineering from Lehigh University. He is a member of the American Society for Metals, the Metallurgical Society, the Materials Research Society, the Microbeam Analysis Society, and the Electron Microscopy Society of America.

Al enjoys flying. He and his wife Julie have one child and live in the NE Heights.

MIRIAM JOHN to Director of Exploratory Systems and Program Development Center 8100.

"I'm thrilled with the challenge of leading one of the most exciting organizations in the Labs," says Mim. "Our charter is no less than to provide leadership and coordination for new initiatives at the Livermore site. Our success can have a significant impact on our future work at Livermore and, we hope, in the Labs as a whole."


MIRIAM JOHN

Mim joined Sandia, Livermore in 1978 as a member of the Solar Systems Studies Division, where she did systems analyses for the Solar Central Receiver Project. She worked with Ted Dellin (2376) to develop the DELSOL ("of the sun") computer code for solar systems evaluation. She also worked on solar power commercialization studies. In 1980, she joined the Thermal Sciences Division, where she did weapon component modeling and kinetic and multiphase flow analyses.

She was promoted to Supervisor of the Analytical Thermal/Fluid Mechanics Division in 1982. In 1985, she became Supervisor of the Systems Research Division, where she worked on Strategic Defense Initiative system studies. She supervised the W89/SRAM II Test and Evaluation Division from 1988 until 1991, when she was promoted to Manager of the Systems Analysis Department.

Mim has a BS in chemistry from Rice University, an MS in chemical engineering from Tulane University, and a PhD in chemical engineering from Princeton University. Before coming to Sandia, she spent a year as a postdoctoral fellow under the auspices of the Organization of American States at the Instituto de Investigaciones Electricas in Cuernavaca, Mexico.

She enjoys ethnic cooking, wine collecting, golf, beachcombing, and reading. Mim and her husband Bill Wilson (5403) live in Livermore.

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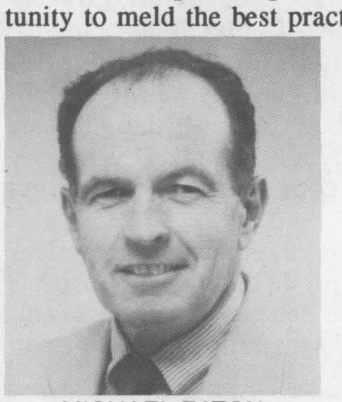
MICHAEL EATON to Director of Command and Control Center 5700.

"This new position provides an exciting opportunity to meld the best practices from the DOE Weapons Program and Work for Others Program in a way that benefits both," says Mike.


MICHAEL EATON

He joined Sandia in 1964 as a member of the Upper Atmospheric Test Division. He worked on ground-system telemetry at Sandia's rocket ranges on Johnston Island and Kauai. He worked on air-delivered seismic and acoustic detectors as part of the Counter Intrusion (COIN) Detection program during the Vietnam War era, and on various security systems for the DoD and DOE.

In 1975, he was promoted to Supervisor of the Technology Assessment Division in the Nuclear Systems Directorate. Mike led several domestic and international programs as part of the DOE/OSS (Office of Safeguard and Security) program from 1975 to 1983. He was Supervisor of Command and Control Division II when he was promoted in 1990 to Manager of the Control Systems Department.

Mike has a BS from Montana State University and an MS from UNM, both in electrical engineering. He served with the Navy from 1957 to 1960.

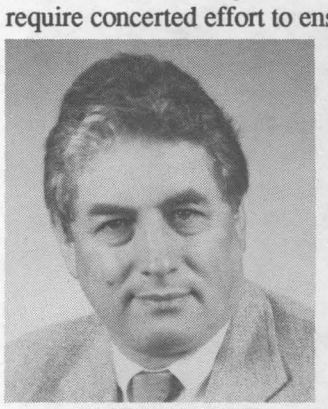
He enjoys golf, tennis, and skiing. Mike and

his wife Debbie have two grown children and live in the NE Heights.

* * *

JAMES WRIGHT to Director of California Weapon Development Center 5300.

"The diminishing nuclear weapon stockpile will require concerted effort to ensure that what remains incorporates the best safety, command and control, quality, and reliability that we can provide," says Jim. "At the same time, we must work to ensure that dismantlement of no-longer-needed weapons proceeds promptly, safely, and in an environmentally conscious fashion — no mean feat given the amount of work to be done."


JAMES WRIGHT

Jim joined Sandia, Livermore in 1958 as a member of the Electrical Design Division. He was responsible for the afterbody assembly and many of the associated components for the B41 bomb. In 1960, he transferred to the W55 Project Engineering Division, where he did firing set design and development and was responsible for the warhead electrical system. He joined the Electronic Support Division in 1961 and was assigned to the Operation Dominic team as an AF&F designer. He went to the Preliminary Analysis Division in 1963 and did reentry vehicle and SAM warhead studies, including preliminary design of the Pebbles reentry vehicle electrical system. In 1964, he was assigned to the Pebbles advanced development team as lead electrical engineer. After a brief return to the Preliminary Systems Design Division, Jim was assigned to the W68/Mk3 project as lead electrical engineer.

In 1969, Jim was promoted to Supervisor of the Nuclear Safety Division. Other divisions he headed include the Preliminary Design Division, the B77 Electrical System Division, Special Projects Division, and the B83 Electrical Systems Division. He was promoted to Manager of the Solar Central Receiver Department in 1982 and managed Sandia's activity as lead laboratory for the program and test and evaluation effort at the Barstow 100 MW Pilot Plant. In 1985, he transferred to the Systems Development Department, where he managed the W89 program.

Jim has a BS in electrical engineering from the University of California at Berkeley. He served with the Navy from 1950 to 1954.

He and his wife Judy have three sons and live in Livermore.

* * *

JAMES KELSEY to Director of Transportation Systems Center 9600.

"Our new Center has an important DOE customer, the Transportation Safeguards Division," says James. "We will continue our priority support of that customer while we seek new opportunities to support the nation's ever-growing transportation problems, such as highway safety and congestion, and the increasingly complex relations between the various transportation modes."


JAMES KELSEY

James joined Sandia's Aerodynamics Department in 1968 and spent the next eight years conducting aerodynamic and flight mechanics analyses and experimentation, specializing in hypersonic applications. From 1977 to 1979, he performed feasibility and utility studies of conceptual weapon systems. In 1979, he transferred to the Drilling Technology Division and worked with a group that developed advanced drilling technology for geothermal energy exploitation applications.

He was promoted to Supervisor of the Drilling Technology Division in 1981. He joined the Advanced Technology Division in 1986 and was project manager for a number of robotic systems, including Fire Ant. In 1988, James was promoted to Manager of the Advanced Systems Department, where his responsibilities included managing robotic systems activities. He was also responsible for advanced communications technology, systems integration of advanced security systems, and software/hardware development of large data fusion systems.

James has a BS and MS in aerospace engineering from the University of Texas, and under Sandia's Educational Assistance Program, he received an MS and PhD in electrical engineering from UNM. He is a member of IEEE and the New Mexico Society of Professional Engineers.

He enjoys travel, photography, and woodworking. James and his wife Suzanne live in Four Hills.

* * *

CAROL YARNALL to Director of Division Operations Center 5500.

"I'm pleased to be able to use my Air Force experience to manage the technical activities of the military liaison function and to help the Defense Programs Division implement a new organizational mode," says Carol.


CAROL YARNALL

Carol joined the Labs in 1989 as a member of the Survivability and Security System Studies Division. She conducted system studies for Defense Nuclear Agency's "Future Look" program and led a project on the future world in Europe and its implications for the security and survivability of non-strategic nuclear forces.

She was promoted to Supervisor of the Exploratory Systems Organization's Quality and Technical Division in 1990. While there she helped integrate technical, performance, ES&H, and quality considerations throughout the organization. She initiated a contractor-led ES&H self-assessment, which was translated into a Labs-wide effort before the 1991 Tiger Team visit, and was instrumental in training staff and management. In August 1991, Carol transferred to the Laboratory Development Organization's Operations Division, where she served as technical and managerial advisor to the vice president on strategic planning, total quality management, technology transfer, management information systems, and strategic studies. She was a member of the Sandia restructure team.

Carol has a BS in chemistry from Wheeling Jesuit College and an MA in public administration from UNM. She graduated from the Senior Executive Program at Harvard and attended Defense Systems Management College at Ft. Belvoir, Va., and the Industrial College of the Armed Forces at Ft. McNair, D.C. She is a member of the Society of Women Engineers, the Albuquerque Committee on Foreign Relations, the Air Force Association, and the Retired Officers Association.

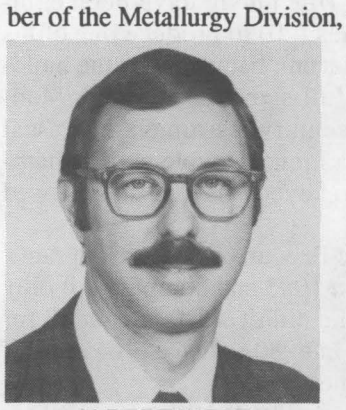
Carol served 26 years with the Air Force and retired as a colonel in 1989. Before joining Sandia, her last assignment was Deputy Director, Space and Strategic Defense Initiative Programs, Air Force Secretariat, the Pentagon. She was Commander of the 13th Missile Warning Squadron and the Clear Air Force Station, Alaska; Chief, Space and Reconnaissance System Division, AF Operational Test and Evaluation Center, KAFB; and Military Assistant to the Defense Science Board, the Pentagon. She also held R&D jobs at the Air Force Weapons Lab.

Carol enjoys tennis, cross-country skiing, and reading. She and her husband Bill live in the SE Heights.

ALBERT WEST to Director of ES&H and Facilities Management Center 8600.

"People and service will be the fundamental themes of our new center as we respond to tomorrow's challenges," says Al.

Al joined Sandia, Livermore in 1971 as a member of the Metallurgy Division, where he established the surface analysis laboratory and studied hydrogen getters and catalysts. In 1979, he transferred to the Command and Control Division, where he developed concepts to protect special nuclear materials from unauthorized access. He was promoted to Supervisor of the Exploratory Chemistry Division in 1977, with responsibilities for weapon materials compatibility, polymer chemistry, and tritium research. In 1985, he became Supervisor of Planning Staff and was customer interface with DOE HQ and provided logistical support to the Livermore vice president and site management team.


ALBERT WEST

In 1986, Al transferred to Advanced Systems Division, a group that conducted engineering research and constructed prototype hardware for the nuclear directed-energy weapons program. He also served as technical advisor during construction of the Defense Engineering Laboratory complex at Livermore.

Al was promoted to Manager of the Test and Model Labs Department in 1991, with responsbilities for environmental test activities, fabrication facilities, and the Tritium Research Laboratory.

He has a BA in chemistry from the University of Oregon and an MS and PhD in chemistry from the University of California at Berkeley. Before coming to Sandia, Al worked at Lawrence Berkeley Laboratory while he was in graduate school. He is a member of Phi Beta Kappa, Sigma Xi, the American Physical Society, the American Chemical Society, and the American Defense Preparedness Society.

Al enjoys amateur wine making, sailing on San Francisco Bay, and woodworking. He and his wife Carol live in Castro Valley. •JC

Take Note

Marcia Sutton, assistant professor at UNM, and Nicholas Mann, an experienced tour guide and author, are organizing a "Circle of Stones" tour of Britain's Stone Age and Celtic sites in June. The tour leaves Albuquerque on June 1 and returns June 14. The tour will include sites such as Stonehenge, stone rows on the moors at Avebury, Neolithic architecture at Cornwall, Tintagel (legendary birthplace of King Arthur), Glastonbury (likely site of King Arthur's kingdom and grave), the Roman baths at Bath, the cathedrals of Salisbury and Wells, and other ancient places in southern England. Tour cost, including round-trip airfare from Albuquerque, is $2,400 (includes all transportation, accommodation, tours, fees, and meals, except lunches and three dinners). For more information, contact Marcia Sutton on 293-4469 or Nicholas Mann on 291-8463.

* * *

To help mid-life and older women overcome obstacles in finding employment, the YWCA Career Services Center is conducting a series of eight workshops through April 23 at the YWCA (7201 Paseo del Norte NE). The workshops will train women in job search strategies, including deciding on a career and identifying marketable skills. Cost is $10. For more information and to register, contact the YWCA on 822-9922. Space is limited.

An Eight-Year Effort

Orval Jones Builds 18th-Century Style Harpsichord

Perseverance, patience, and a passion for fine furniture and fine music have been combined by Orval Jones (20) to produce one of his proudest personal accomplishments — the building of a beautiful, full-sized harpsichord. Modeled after an 18th century instrument by Pascal Taskin, it is called a French double manual harpsichord — with two keyboards, one stairstepped above the other.

Orval, Sandia's Executive VP for Programs, began the project in 1983 and completed it only last year, but says he didn't work on it at all for several years in the late '80s when a little short of personal-project time.

Although Orval constructed the instrument using a kit, it was no small task. "The kit comes with instructions, but they're pretty bare-boned, leaving a lot of interpretation to the individual builder. It has hundreds of pieces, and the wooden pieces are all in primitive condition. I didn't keep track of the hours I spent on the project, but I'd guess that I probably put in about 1,500 hours or so on it."

Equal Time for Three Tasks

He says this time was divided about equally among three tasks — constructing the case and bench; painting, finishing, and decorating; and installing the strings, keyboard, and jacks.

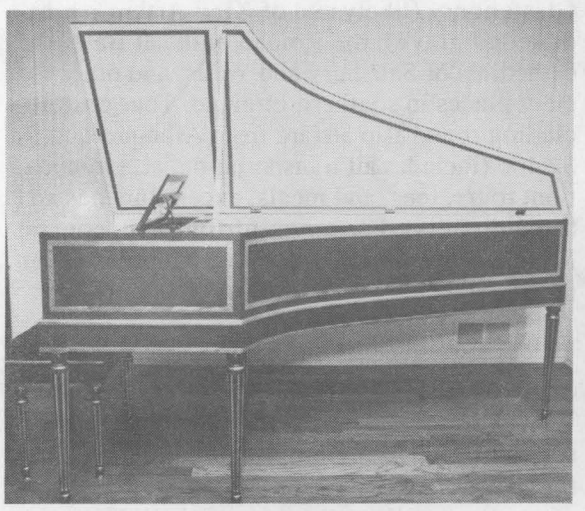
Orval plays for his own entertainment and relaxation, and only reluctantly for others (nosey LAB NEWS editors included). He says that his three grown children are more accomplished and hints that harpsichords may one day be a part of their inheritance.

He acknowledges several false starts before he got cranking on building it. "In the mid-'70s, I became very interested in the sound of harpsichords, and I saw a magazine ad for a harpsichord kit. I wrote off to that company and later to several more, but didn't decide to really build one until 1982.

"Sometimes I look at it and think, 'gosh, I really can't believe I did that.' "

"I learned then that a local pathologist, Charlie Palmer, was in the process of building one. I called him, and he said that this particular company was having a sale on its kits. That was enough to tip me over the edge, and I ordered one. Charlie also gave me lots of valuable advice while I was building it and let me use his paint room."

Obviously proud of his accomplishment, but modest about it, Orval says, "There are times when I wondered whether I'd ever complete it. Sometimes I look at it and think, 'gosh, I really can't believe I did that.' "



FINISHED PRODUCT — The satin finish on Orval's harpsichord consists of five coats of hand-rubbed enamel. The exterior is a dark rust, and the interior is a harmonizing cameo cream. Gold-leaf stripes and molding accents provide an elegant finishing touch.

TUNING TIME — Orval Jones (20) tunes the French harpsichord that he completed last year. The colorful painting on the sound board was done by Camille Gibson (113). The small white objects, called jacks, pluck the 189 harpsichord strings. These strings wrap around the black wrest pins, which can be turned to increase or decrease the tension on the strings and change their pitch.

Orval seems particularly proud of the one part of the job that he didn't do — the ornate painting on the sound board (see photo) that was done by Camille Gibson of Corporate Policies Dept. 113. (However, Camille wasn't a Labs employee at the time; she joined Sandia in 1989 after getting her business degree.)

Camille's colorful sound board painting includes a gold seal incorporating Orval's name, bright flowers, and a bird sitting on a dead tree branch. Such depictions are often used on harpsichord sound boards, explains Orval: "They are symbolic in relation to the wood of the sound board, meaning, 'In life I was silent, but in death I sing.' "

The harpsichord is the latest of his many woodworking projects, which include grandfather clocks, coffee tables, and occasional tables. Until about four years ago when he had a large workshop built in his back yard, Orval did most projects in his garage and even in the house.

In fact, he had large parts of the partially completed harpsichord on his dining room table for a time before his shop was completed. "An uncompleted harpsichord on the dining room table is perhaps the ultimate conversation piece," he notes. "My wife, Pauline, was probably happier than I was to see my workshop completed."

Orval plans to build a second harpsichord — a single-keyboard Flemish harpsichord — and already has the kit. But it's going to be a year or two before he starts it. "I'm still recovering from this one," he says. •LP

Sandia News Briefs

Sandia to Co-sponsor "Recycle '92" Next Week

Information and new ideas about recycling will be shared by government, industry, and community groups at the New Mexico Governor's Symposium on Recycling at the Albuquerque Convention Center on April 9 and 10. Sandia is a co-sponsor of the symposium, where information about materials collection, transportation, and markets will be offered. General symposium hours are 8:30 a.m. to 5 p.m. on Thursday, April 9, and 8:30 a.m. to 3 p.m. the following day. Also, a free "Vendor's Showcase" will be open to the public from noon to 6:30 p.m. on the 9th and from 8 a.m. to 4 p.m. on the 10th. The showcase will feature equipment, processes, and products made from recyclable materials. For registration information, call 243-1344, or for general information, call Sandia's recycling coordinator, Louise Bland (3422), on 4-2540.

Levin Designated Certified Benefit Specialist

Jann Levin of Benefits Systems and Health Care Planning Dept. 3545 has been designated a Certified Employee Benefit Specialist (CEBS). The certification is by the International Foundation of Employee Benefits Plans and the Wharton School of the University of Pennsylvania. Jann qualified by passing a series of 10 national employee benefit exams. One other Sandian has a CEBS designation: Mark Biggs of Benefits Planning and Pension Fund Management Dept. 3544.

Sandia 'Ties the Knot' With NM Tech and UTEP

Sandia agreed recently to help foster interaction in research and academics among the Labs, the New Mexico Institute of Mining and Technology (NM Tech), and the University of Texas at El Paso (UTEP). The alliance is expected to help researchers at the three institutions broaden their experience base, use public resources more effectively, facilitate technology development, and encourage technology transfer.

On-campus liaison offices have been created at NM Tech and UTEP to help facilitate collaborative research, educational initiatives, surplus equipment loans, and mutual requests for speakers, consultants, and adjunct professors. For more information, contact Julian Lovato (35B) on 5-9760.

Feedback

Q: I understand that Transportation Services no longer has vehicles available to loan. Is there a master list of organizations with vehicles that may be loaned to other organizations? The vehicle loan pool has been a valuable tool for Sandians to obtain vehicles on an occasional basis. Now that this option no longer exists, I must spend more time than before to track down a vehicle when I need one. Are there any plans to change this in the near future? I suggest publishing a list of vehicles and their organizations in the Sandia phone directory.

A: Effective Oct. 1, 1991, vehicles were put on a charge-back system requiring individual directorates to bear vehicle costs. Prior to this system, all vehicles were funded indirectly. Unfortunately, there is no funding at present for continued operation of a universal loan pool. Recently, we sent vehicle cost and assignment information to directors or their administrative assistants for review and asked them to identify vehicles in their directorates that might be available on a short-term basis.

It is sometimes possible to lease used vehicles from the Government Services Administration downtown on a month-to-month basis if any are available. To inquire about this possibility, contact Bob Barton (3423) on 4-3086.

Jim Martin (3400)

Q: Why are medical insurance deductibles based on salary? Other insurance premiums (car, life, etc.) aren't. This seems like social engineering. Why do we have this policy? Is there a valid reason other than social engineering?

A: Before the present formula for deductibles under the Medical Care Plan (MCP) was selected, various alternatives were investigated. The formula we implemented appeared the most equitable, because it was based on the ability to bear the cost (somewhat social engineering) and was also administratively acceptable.

One option would have been to increase the deductible based on inflation. Because the deductible had not been increased since 1977, it would have gone up to $500 for all individuals and would have continued to increase each year thereafter. Another option would have been to deduct a percentage of annual pay, say 0.3 percent; many companies use this formula. However, it is difficult to administrate and requires that individual salaries be provided to administrators, which can be a touchy situation. A final option would have been to charge a specific deductible for the company-paid plan, say $500, and allow employees to purchase a lower deductible through premium contributions.

As with most Sandia benefits, the MCP must be comparable to AT&T practice. AT&T uses a deductible based on salary tiers. Each employee is identified in a tier, but actual salary is not revealed. Because we knew the increased deductible would be a personal budgeting concern for some employees, we implemented the Reimbursement Spending Accounts (RSA) at the same time. This program allows employees to set aside tax-free dollars from their paychecks to cover eligible health care expenses, including deductibles. Open enrollment for RSA is held each October.

Finally, beginning Jan. 1, a Health Maintenance Organization (HMO) option was offered to Sandians in Albuquerque. Enrollment for this program is also in October. Under an HMO, instead of deductibles, a copayment is required at the time of treatment.

Ralph Bonner (3500)

Got a Question or Suggestion?

Employees who have suggestions for improvements at Sandia or who need quick answers to Feedback questions are encouraged to telefax their suggestions/questions to the Employee Communications Dept. 3162 at 844-0645. For additional information about how the system works, call Janet Carpenter (3162) on 844-7841. She can also provide printed Feedback forms if you cannot locate one where they are stocked in common areas throughout the Labs.

Q: Recently all of Directorate 1400 was shown a security videotape on "Opsec," or operational security. For an organization that prides itself on the educational level of its staff, this video was mind-numbing. Between the 6th-grade intellectual level and the constant use of security jargon, this video was the mental equivalent of Novocain™.

Far more troubling was the attempt to associate anti-nuclear activities with "unpatriotic" activities. On at least two occasions in the tape, anti-nuclear activists were lumped together with terrorists and foreign spies. This seems to be an example of the security establishment's inability to differentiate between legitimate dissent and genuine threat. The last time I checked, free speech was still one of the national values we are trying to protect. Perhaps while the staff is being subjected to idiotic videos on security we can show security management a videotape in American civics.

Anything less than withdrawal of this tape from circulation will demonstrate the security organization's unwillingness to recognize the difference between espionage and constitutionally protected speech.

A: I obtained and watched the 12-1/2-minute videotape checked out to Org. 1400 Feb. 12, titled "The OPSEC Picture Puzzle." I had four other employees, two of whom were not associated with Security, view it as well. We all agreed that, though it was perhaps less than inspirational, the video message was accurate and worth considering.

The video was prepared in 1989 by DOE's Nevada Operations Office as a general security education aid. As you stated, there are two references to anti-nuclear activities. The exact quotes follow:

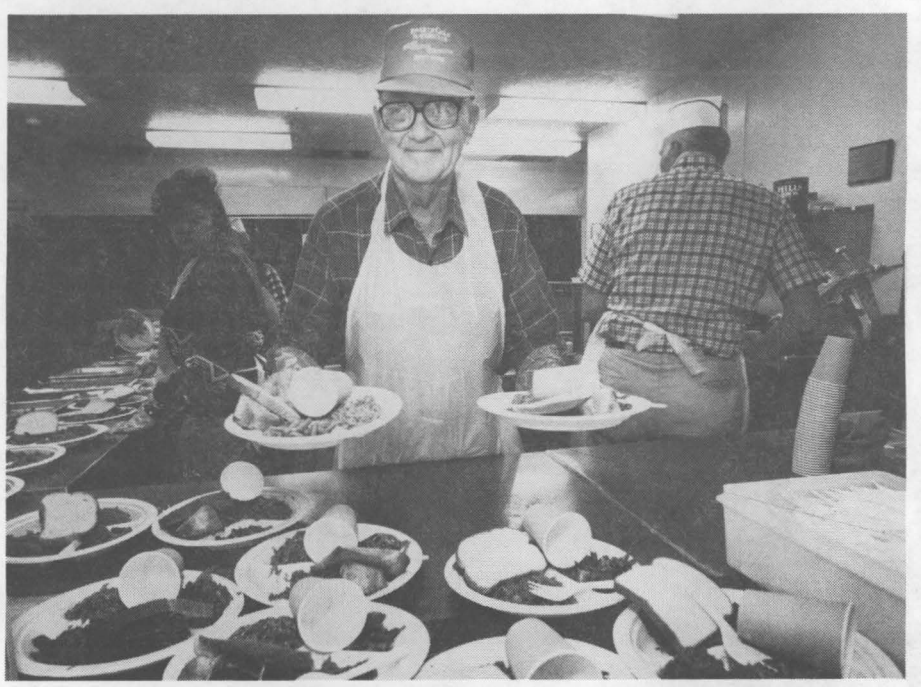
"Be aware that there are foreign agents, terrorist groups, the criminal element, and anti-nuclear supporters who are actively gathering information to disrupt critical DOE work."

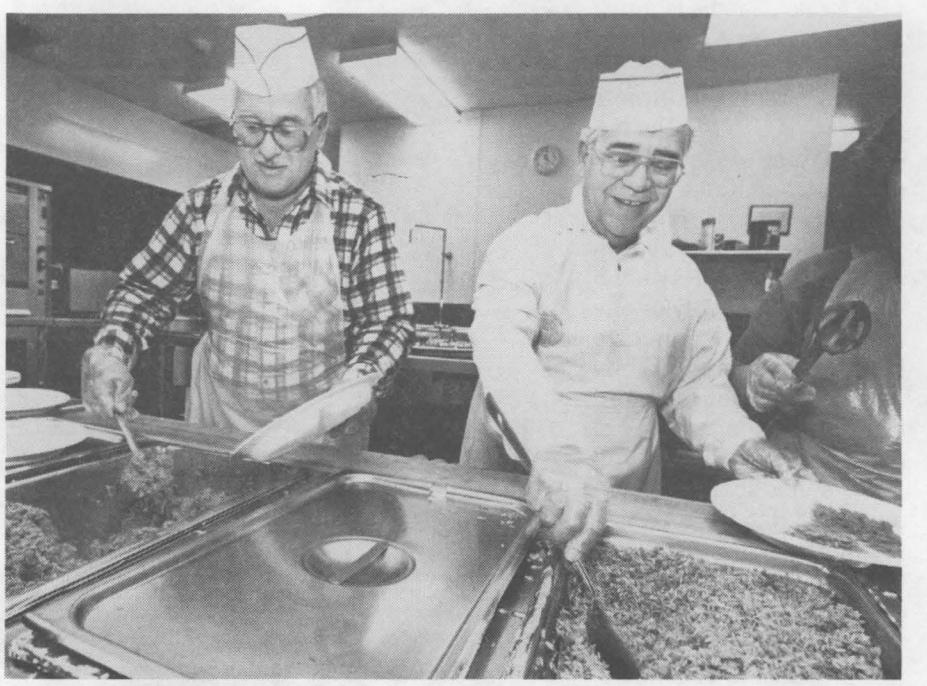
"No matter how insignificant they may seem, pieces of information like these are indicators of our capabilities and our plans, and as such provide vital clues about sensitive programs. The fact is that there are adversaries at work in our community. They could be from competing companies, anti-nuclear groups, or foreign governments. In any case, attempts are made every day to fit pieces of information together to form a total picture of sensitive activities. As DOE employees and contractors we are entrusted with privileged information about programs, exercises, facilities, and capabilities . . ."

These statements are generally in keeping with DOE's security programs. It is clear to me that the reference to anti-nuclear activists is not directed at those who simply disagree with or legally protest DOE actions.

I will have our attorneys, and DOE's attorneys if necessary, review the tape. Meanwhile, the tape will remain in our library and be available for use.

Jim Martin (3400)





SERVING IT HOT — Three retired Sandians and one retired DOE employee spend much of their time serving hot meals and bussing tables at the Good Shepherd Center in downtown Albuquerque. C.C. Riley (left photo, a retired Sandia foundry foreman) gets up at 3:30 every weekday morning to make toast and coffee for the 6:30 breakfast crowd. He also works weekday evenings and some weekends. In the right photo, Leo Apodaca (left, a retired DOE employee) and Bob Garcia (retired Sandia Personnel Director) serve hot meals. On a typical evening, the shelter feeds 300 homeless people. "It's the most important work I do all week," says Bob. Sandia retiree Chris Garcia (not seen) also works at the shelter.

feedback

Q: What is the bluish-green chemical that has been sprayed on the bare ground in and around Area I? How can I get a copy of the MSDS for it?

A: The bluish-green chemical is Surflan, a pre-emptive herbicide that adheres to soil particles and kills weed seeds before they germinate. The chemical is water soluble, non-staining, and harmless. For a copy of the product safety data sheet, call Carol Harrison (7100) on 5-9317.

Jim Jacobs (7100)

Q: We have heard about empowerment and ownership and in some cases have seen them work, but one area where neither is a great success is building maintenance. Many small items are not being handled because no one consistently takes the initiative to fill out the forms requesting the work. It appears that no one really owns the buildings. We have signs saying that a certain director is responsible for ES&H, but I don't believe that is the person who should be concerned with seeing that light bulbs are replaced.

It seems to me that each building should have one person formally assigned to making sure that normal maintenance is done on a regular basis. For example, several fluorescent lamps in the atrium of Bldg. 836 have been out for weeks and the handle on a hot water fountain on the first floor is broken. If one person were responsible for seeing that such items are repaired, there would be a much higher probability of getting it done. In larger buildings, someone could also take responsibility for heating and cooling. Regardless of how much empowerment and ownership we have, very few folks are going to consistently take the time to write up maintenance requests unless they are assigned to do so.

A: Your feedback addresses two concerns: space ownership and Maintenance Service Requests (MSRs). Consistent with the requirements in the ES&H Manual, Facilities Operations and Maintenance (7800) employees accept ownership of building equipment rooms, utilities chases, and building service equipment. Office and laboratory areas are owned by individuals who operate or occupy the space, and public or common-use areas, such as corridors and stairwells, are owned by Building ES&H coordinators or their designees. ES&H coordinators ensure that no space is left unassigned, and designated owners are responsible for the safety and health of building occupants as well as for housekeeping and MSRs.

I agree that the process to initiate MSRs for small items needs improvement. The input process is being revised. In the near future, MSRs will be accepted by phone on 4-4571. Emergencies will be handled immediately; other small repairs will typically be completed in two to three working days. I thank you for sharing your concerns about space ownership, and have reviewed your feedback with the Bldg. 836 ES&H Coordinator, who accepts ownership of the atrium and corridor areas.

Jim Jacobs (7100)

Q: Sandia's telephone directory is a disgrace. It has been over five months since the latest edition was published, and it will likely be another five months before employees see the next edition. The previously used loose-leaf method was far superior; changes to it were distributed monthly and even semi-monthly in a timely manner. Why was the loose-leaf system abandoned? I recommend Sandia return to the method that worked so well.

A: Your comments on the timeliness of the *Sandia Directory* are well-founded. Directory information will always be somewhat out of date, given the rate of change at Sandia. When we switched to the new format, we intended to publish a new directory every quarter. However, the Restructure Committee advised us to delay the next edition until after new Centers are in place. Since it takes about two months to compile the information and publish a complete directory, you can expect to see a new one around late May.

The loose-leaf form was abandoned primarily because it was a constant struggle to keep up with it and it was costing a considerable amount of labor. We calculate that Sandia will gain the equivalent of eight full-time employees a year in update time alone. Incidentally, about 80 percent of those who returned our feedback form favored the new format. We received some good suggestions and will respond with an even better product next time. We hope to have an on-line directory by fall.

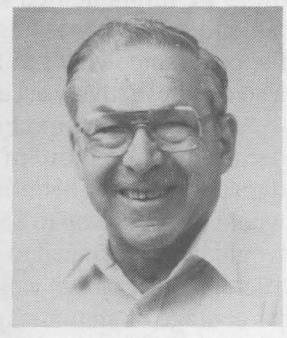
Herb Pitts (3100)

"WOMEN ON THE MOVE" awards went to two Sandians this year — Pauline Ho (left, 1126) and Ann Riley (3726). From dozens of nominations, the YWCA annually selects a limited number of honorees for their leadership, community involvement, and professional accomplishments. Pauline, selected in the "science and research" category, has been at Sandia since 1981 and conducts research in processes involved in chemical vapor deposition. She is chairperson of the Asian Leadership and Outreach Committee. Ann, a Sandia contracting representative, is a volunteer and board member for All Faiths Receiving Home, a board member of the New Mexico Law Enforcement Academy, and president of the San Gabriel Area Neighborhood Association. Ann was selected in the "other professional" category.

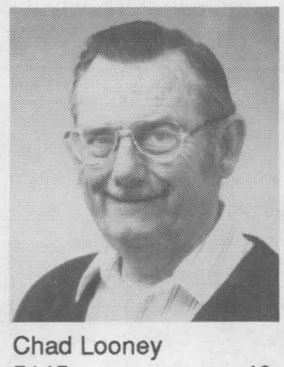
SHOULD THEY DUCK? — No, these retired and otherwise former Sandians aren't actually under a low-flying airplane; they're standing in front of one of the Atomic Museum's exhibits at the edge of a newly expanded parking lot on Kirtland AFB. Museum volunteers (from left) Hank Willis, Harry Kinney, Betty Brake, Raymond Caster, and Joe Taylor say they enjoy the chance to help the Museum. They also want to get the word out that there are plenty of opportunities for more volunteers, and that they'd especially like to have Sandia retirees working with them. Volunteer Coordinator Virginia Salazar says she would be delighted to talk with prospective volunteers; Virginia can be reached on 845-5515.

Recent Retirees

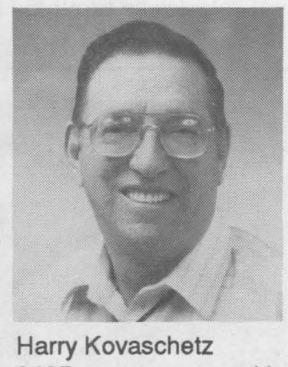
Jewel Wheelis
9531 34



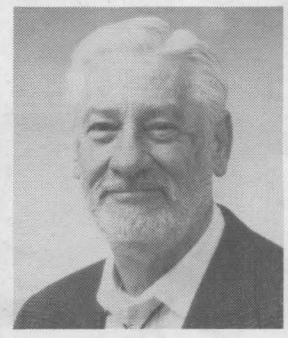
Jim Scheibner
9531 34



Chad Looney
5145 40



Harry Kovaschetz
2485 41



Ed Opland
3532 33

Marvin Coon
3544 35

Eclectic Collection

From Washington to Lincoln to Kennedy, Barry Schrader Collects Mementos of Them All

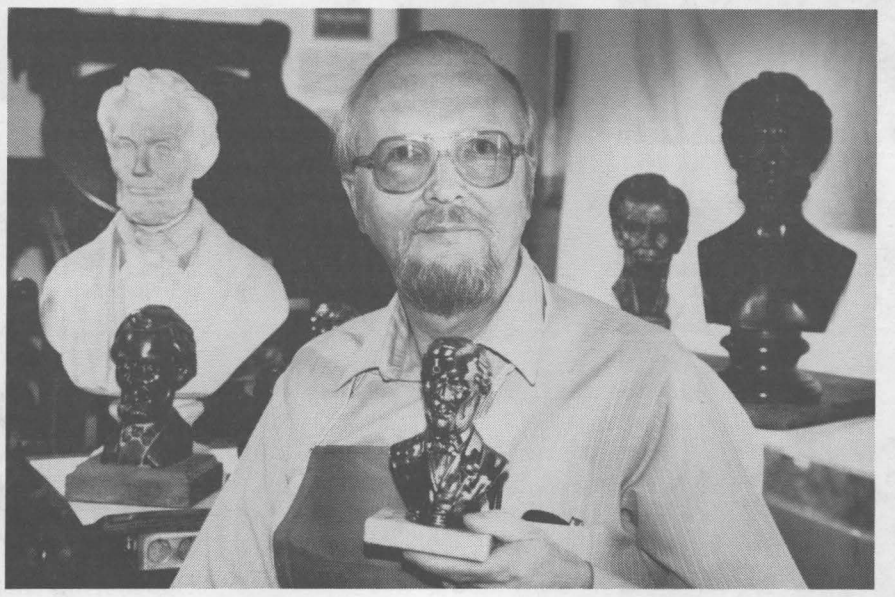
What kind of person collects Abraham Lincoln busts, famous newspaper front pages, old handset type, and antique printing presses?

How about someone who says he likes Abraham Lincoln not just because he was a great American, but "because he was big and lanky and had a beard like me."

Besides that, notes Barry Schrader (8622), public information specialist at Sandia, Livermore, he and Lincoln hail from the same state of Illinois, where Barry once owned several weekly newspapers.

Later, when he was 26, Barry moved to California and took a job as a newspaper editor in Livermore, where he still resides with his wife, Kay, and their youngest son, Darrin.

He cultivates his passion for American history and his enthusiasm for the printing industry by collecting mementos of both. He frequently labors in a makeshift print shop he has set up in his garage, which is reminiscent of a hands-on museum. He often shares his love of history with schoolchildren, displaying his laminated newspaper pages at local schools.



WHERE'S WALDO? — One of these characters is Barry Schrader (8622); he's the one with glasses. The others are likenesses of Abraham Lincoln. Barry collects Lincoln memorabilia along with historic newspaper front pages, antique printing presses, old Bibles, and political campaign signs.

(Photos by Linda Doran)

Among the historic newspaper pages in Barry's collection are the assassinations of President John Kennedy in 1963, presidential candidate Robert Kennedy in 1968, and Rev. Martin Luther King in 1968; the San Francisco earthquake of 1906; the discovery of gold in California in 1848; the end of both the First and Second world wars; and the deaths of Presidents Franklin Roosevelt and Harry Truman. Other newspapers in his possession include an obituary of George Washington from 1799 and a story about the assassination of Abraham Lincoln in 1865.

"Ask my wife what she thinks of our garage packed full of my miscellany."

Still Uses the Antique Presses

Barry actually uses the antique printing presses in his collection. The two presses — a 1911 Peerless handplaten and an 1888 Golding Pearl, are completely operational. Barry often employs the 1911 model to print cards, flyers, and invitations publicizing community events.

Collecting letter presses is a fairly weighty hobby — his presses weigh 2,000 and 750 pounds each.

As Barry himself points out, collecting letter presses is a fairly weighty hobby — his two presses weigh 2,000 and 750 pounds, respectively, and the accompanying type drawers weigh 20 to 50 pounds each. (He has more than 100 such drawers, known as California Job Cases, each containing letters and numbers in a particular typeface.)

To prepare his machinery for a printing job, he painstakingly arranges letters in a metal form or chase and anchors them in place with wood blocks and expandable metal quoins. When he is finished with that, he smears ink onto a rotating plate on the press. Rollers pick up the ink and transfer it first to the type, which then transfers the ink to a blank piece of paper — producing one printed page at a time.

Some of Barry's recent publications include an American Amateur Press Association (AAPA) tribute to Walt Brovald, a long-time letterpress hobbyist and newspaper publisher in Minnesota, and an invitation to an autograph signing for a book Barry wrote himself, "Will the Last Person Leaving Livermore Please Unscrew the Bulb in Fire Station One."

Runs in the Family

Besides his printing presses and newspaper front pages, Barry also collects old Bibles and political campaign memorabilia, including all the yard signs from local elections for the past 20 years.

If that sounds like a lot of collecting, Barry notes that he still doesn't hold a candle to his father, who collected cups and saucers, railroad lanterns, antique tools, pipes and cigar holders, salt dishes, musket loaders, pistols, and samples of barbed wire.

Barry's older son, Todd, has also picked up on the family tradition, amassing collections of Star Wars and Batman toys.

In fact, the only side of the family not actively involved in collecting is the female side. Barry's mother sold most of her husband's voluminous collections after his death. As for his own wife, Barry quips, "Just ask her what she thinks of our garage packed full of my miscellany." •LD

BARRY PREPARES to insert a metal form into a 1911 Peerless handplaten, one of two completely operational antique printing presses in his garage.

Retiree Open Houses

The Labs is holding an open house in honor of retiree **Robert Neel** (9522) in the Area I Cafeteria (Bldg. 861) on Friday, April 10, from 2:30 to 4:30 p.m. Refreshments will be served. Friends and acquaintances are invited.

* * *

The Labs is holding an open house in honor of retiree **Robert O'Nan** (2346) in Bldg. 891, Rm. 1031, on Monday, April 13, from 10 a.m. to noon. Refreshments will be served. Friends and acquaintances are invited.

Summer Housing Needed

Sandia is seeking furnished summer housing and apartments for summer employees. The housing is for college professors and graduate students who will arrive in May or June and leave in August or early September. If you have a summer rental, please call Renee Foster on 844-3441 by April 8.

Retiree Deaths

Salomon Baca (64)	Feb. 1
Phil Moya (63)	Feb. 1
Erroll Gay (72)	Feb. 5
Murt McMullen (71)	Feb. 6
James Wade (87)	Feb. 10
Johnnie Duran (60)	Feb. 12
Wallace Eder (74)	Feb. 12
Charles Hoyle (62)	Feb. 15
Marion Brown (82)	Feb. 20
Charles Randall (66)	Feb. 23
Kathleen Sadler (76)	Feb. 28

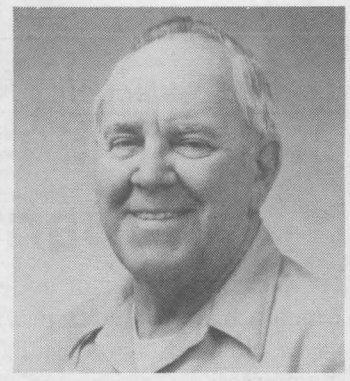
MILEPOSTS

LAB NEWS

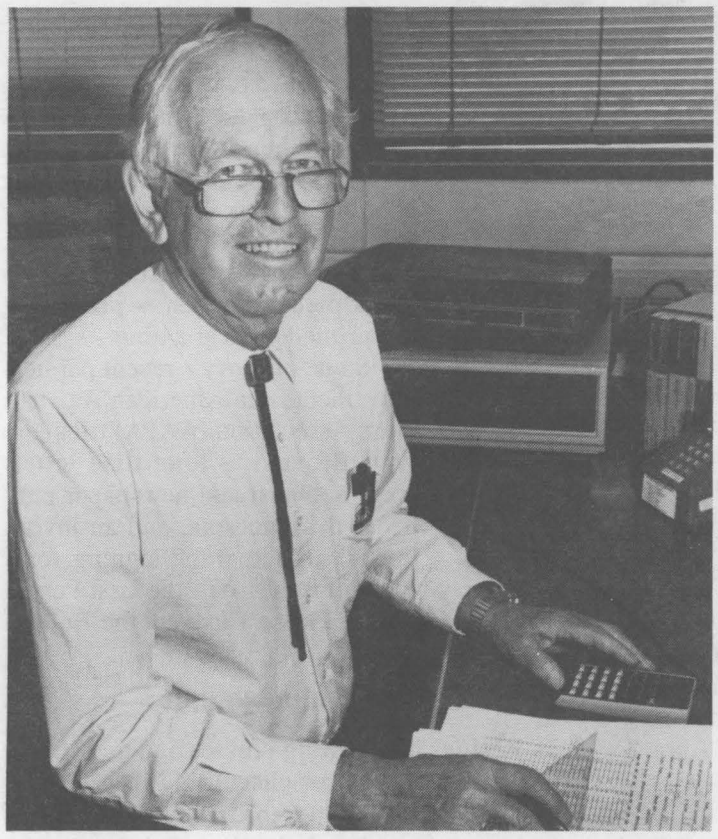
April 1992

Jim Davis
3423 35

Maria Feliz
3726 15

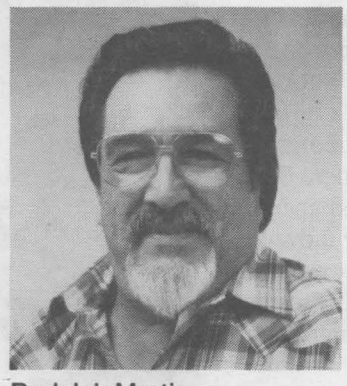


Charlie Thomson
7812 35

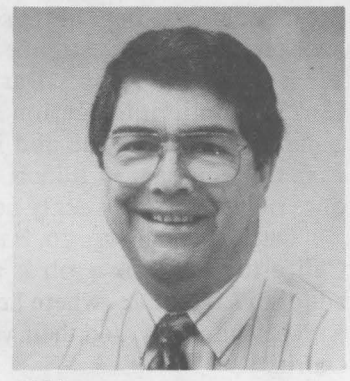


James Simpson
9538 40

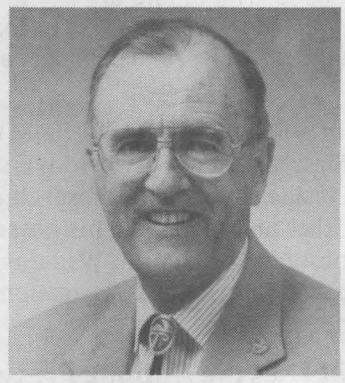
Eddy McClain
3422 15



Rudolph Martinez
3153 30

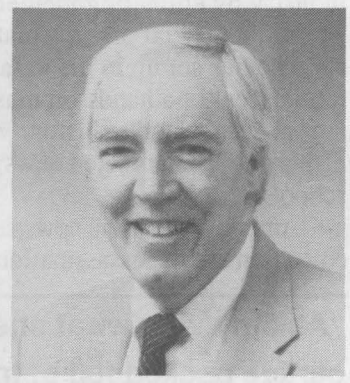


Al Manzanares
2851 25



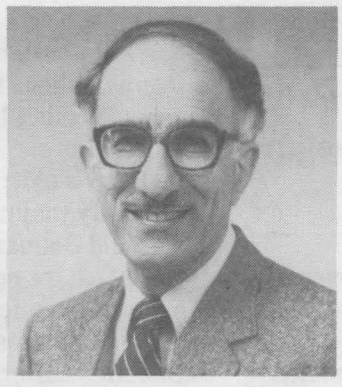
Hugh Church
6321 35

Lee Ann Hubbs
8534 15



Larry O'Connell
2814 35

Carla Perea
3426 15



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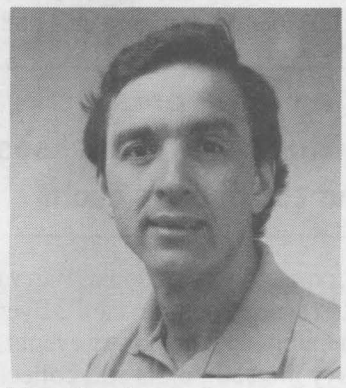

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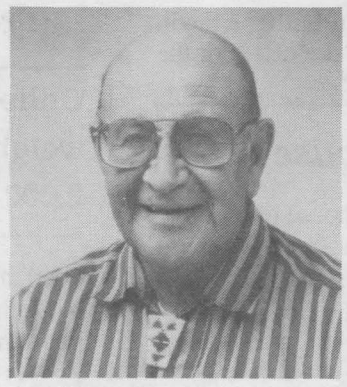

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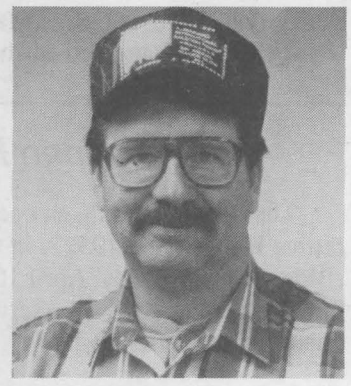

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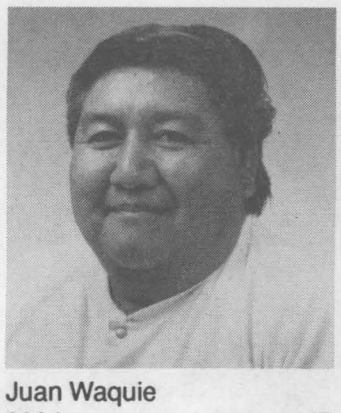

Juan Waquie
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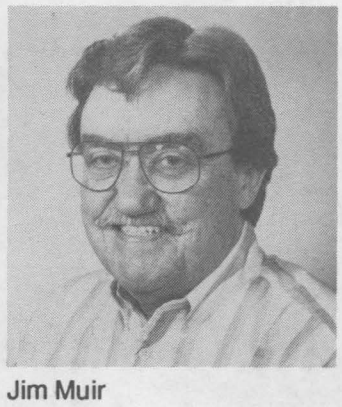

Jim Muir
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Donald Wright
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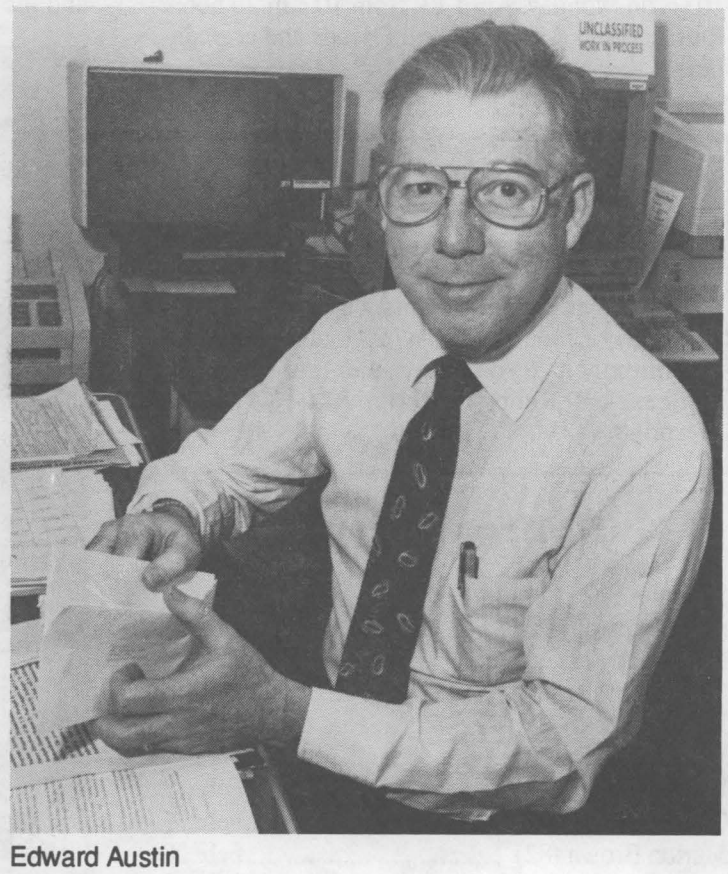

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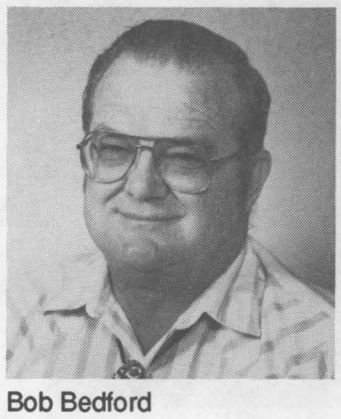

Bob Bedford
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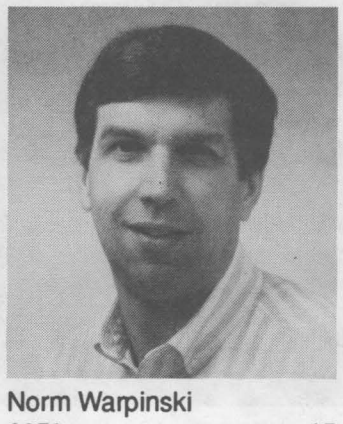

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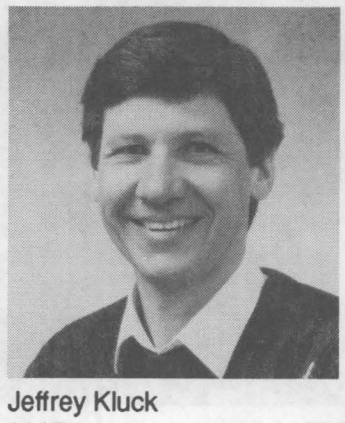

Jeffrey Kluck
9227 20

UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS • UNCLASSIFIED ADVERTISEMENTS

Deadline: Friday noon before week of publication unless changed by holiday. Mail to Dept. 3162.

Ad Rules

1. Limit 20 words, including last name and home phone.
2. Include organization and full name with each ad submission.
3. Submit each ad in writing. No phone-ins.
4. Use 8½ by 11-inch paper.
5. Use separate sheet for each ad category.
6. Type or print ads legibly; use only accepted abbreviations.
7. One ad per category per issue.
8. No more than two insertions of same "for sale" or "wanted" item.
9. No "For Rent" ads except for employees on temporary assignment.
10. No commercial ads.
11. For active and retired Sandians and DOE employees.
12. Housing listed for sale is available for occupancy without regard to race, creed, color, or national origin.
13. "Work Wanted" ads limited to student-aged children of employees.

MISCELLANEOUS

FORMAL DRESSES, great condition, worn once, baby blue size 4, purple w/matching shoes size 7m, pink size 10, $35-$50. Ponce, 831-6864 after 6 p.m.

DOWN VEST, "Hunter Mountain," beige/navy w/red accent, zip-up pockets, size small, gift (never worn), cost $100, asking $25. Schkade, 292-5126.

WEIGHT BENCH, w/sit-up attachment, $15. Finger, 266-8906.

DAN WESSON .357-MAG., $185; Ruger .22, single-six, short, long cylinders, $225; Kelty Ridgeway child carrier, $80. Dodd, 293-3404.

QUEEN-SIZE SOFA SLEEPER, like new, $150; French provincial buffet, $250; maple double headboard, $12; old drying rack, $15. Ramel, 821-0475.

MINIATURE DACHSHUND PUPPIES, AKC-registered, long-hair, excellent w/children, great personalities, see mother & father, 3 red males, $250-$300. Ferrell, 888-3023.

LAWN MOWER, MTD, 21-in., 4-hp, hardly used; twin bed, headboard, mattress; folding cot, mattress, springs, excellent for child. Worden, 881-4486.

KING-SIZE WATERBED, w/heating element, $75 OBO; get in shape w/the Octagym exerciser, only $45. Maldonado, 836-6923 after 5 p.m.

JETSKI, '85 Kawasaki 550, clean, Imron paint, many extras, runs great, $2,100. Striker, 296-8206.

BOX SPRING, bed frame, & headboard, single, $100; 360-KB floppy drive w/dual controller, $40; executive desk chair, $100. Chavez, 275-0490.

YORKSHIRE TERRIER PUPPIES, purebred, no papers, $225/female, $200/male. Gabaldon, 292-7340.

INFLATABLE RAFT, 4-person, w/4 life preservers; antique Singer sewing machine/cabinet. Guerra, 256-1356.

SOFTWARE LIBRARY: Lotus 2.2, Windows 3.0, WordPerfect 5.0 complete set, + more programs, original books & disks, $350/all. Bremer, 292-4912.

SOLO-FLEX, complete, w/butterfly & leg extension units, excellent condition, $850 OBO. Padilla, 294-3127.

DINING ROOM SET: informal dining, includes 6 chairs, 2 leaves, $200. Perich, 293-8261.

ROYAL UPRIGHT VACUUM, $25; brand-new fondue set, $10; like new bike rack, $20. Anderson, 897-2772.

ESTATE FURNITURE: 80-in. long low-pillow-back sofa, earth-tone floral, $200; pair coordinating burnt-orange velvet chairs, $200; good condition. Barnum, 298-2865.

LANE BARCALOUNGER, brown, excellent condition, wall-hugger; tank-type vacuum cleaner. Kindschi, 256-0531.

TWO NEW GOLF SKIRT & TOP SETS, navy, white, size 10, $12/ea.; new golf shoes, 7AA, $9. Hines, 821-8592.

WOODSTOVE/FIREPLACE INSERT, heats more than 1,000 sq. ft., w/fireplace cover, $300 OBO. Blaich, 271-8470.

SOFTWARE, Volks Writer Deluxe Plus word processor, 2 disks, flight simulator, Ver. 2.1 for IBM, $25/ea. Henry, 266-6467.

REAR BUMPER for '91 Jeep Cherokee, black, slightly scratched, $40 OBO. Dye, 897-0304.

STEEL SHELVING ASSEMBLIES, adjustable, open frame, new, $30. Silverman, 298-1308.

DYNASTAR STARSOFT 185 SKIS, bought Dec. 1987, Look Nevada Grand Prix bindings, Nordica size 9 woman's boots, $125 OBO. Leeman, 299-9149.

GREAT PYRENEES, 11-month-old female, white, w/papers, needs home, doghouse & runner included, $150. Pompeo, 293-9204.

CRIB, $40; high chair, $30; infant/toddler car seats, $25 & $30; walker; bassinet; changing table; infant girl's clothing. Hodge, 266-6501.

ENTERTAINMENT CENTER, white-wash oak, w/matching 5-drawer dresser, $450; color TV, $100; Sony stereo receiver, $100; more. Fitzgerald, 265-7955.

CRAFTSMAN TABLE SAW, 10-in., w/stand & 3 extensions; 8-in. bench grinder; 18-in. jigsaw; 9-in. AC/DC color portable TV. Nunez, 884-3623.

TWO NEW LOUNGE CHAIRS, purchased from Homestead House, paid $677 ea., sell $350 ea. Harrsion, 884-4994.

MINIATURE DACHSHUNDS, no papers, 8 wks. old, 3 males, $150/ea. Gutierrez, 293-9030.

KING-SIZE WATERBED, baffled foundation, 6 drawers, cushioned edging, deluxe UL heater, mattress/cover, $99. Hagerman, 275-3326.

DESKS, $50 & $150 cash. Rea, 296-4620.

QUEEN-SIZE BED, Sealy Comfort Guard, box spring, mattress, & metal frame, good condition, $175. Henderson, 344-7894.

AKC CHOWS, 8 wks. old, excellent quality, 1 bld. male, 2 cinn. females, first shots, health guaranteed, parents on premises, $200 negotiable. Brown, 884-0345.

NCR COMPUTER, IBM XT-compatible, 20M hard drive, 360K floppy, Epson dot-matrix printer, make offer. York, 828-9505.

CRAFTSMAN METAL LATHE, 12 x 36, on stand, w/complete accessory package, excellent condition, $1,250. Stinebaugh, 869-2270.

ROWING MACHINE, w/electronic timer, "Tunturi" from Sears, like new, $125; "Orthopod" chiropractic back exerciser, $200. Borders, 823-9528.

BULLET-PROOF GLASS, 2 panels, approx. 15" x 18", resists up to .44-magnum, $20; exquisite brass French-curve door handles, $50. Demos, 294-6492.

FABRIC, 30-35 yards of pale-pink slipper satin, still on roll, purchased for wedding that didn't happen, $120. Davis, 294-0139.

HOOVER QUIK BROOM, $10; Technics 100W/ch. receiver, needs parts, $25 OBO. Clark, 281-1243.

PROJECTION SCREEN, 50 x 50, by Da-Lite, in original box, $40. Wagner, 823-9323.

ENTERTAINMENT SYSTEM: 6-component, fully loaded, w/speakers, $1,300 new, sell for $800; Thomas organ, new condition, $400 OBO. Martin, 294-2863 after 5 p.m.

BATHROOM VANITY, solid oak, 48-in., $250. Luther, 293-4462.

WHEELCHAIR, good condition, $450 value, asking $125. Ottinger, 242-5944.

HEATING DUCT, various sizes & fittings, half price or less; screens: copper 3-Lite casement, steel frame, $3/ea. VanVickle, 299-1240.

KAR CADDY II, excellent condition, $575. Blaine, 299-1036.

HOT SPRINGS SPA, indoor/outdoor, will fit through standard door, self-contained, back massager, fully insulated, like new. Brodie, 836-6977.

GUITAR PROCESSOR, Roland GP16 w/Mk II pedal, $850; Martin Em18 guitar (USA, neck thru), $425 OBO; dog run, $110. O'Toole, 866-0403.

HUGE SALE, furniture, clothes, lots more, must see, Sat. & Sun., 8 a.m.-5 p.m., 5431 Timberline NW (Taylor Ranch). Jaramillo, 898-7757.

PING-PONG TABLE, full-size, folds up & rolls, 1 player playback feature, $50 OBO. Johnson, 296-3431.

LEER FIBERGLASS SHELL, fits full-size pickup, pass-through window, sliding side windows w/screens, interior light, excellent condition, $350. Zaorski, 281-9194.

MACINTOSH COMPUTER, w/1MB RAM ext., floppy drive, keyboard, mouse, software & manuals, no hard disk, ideal for students. Chapman, 292-6877.

TOWING DOLLY, adjustable width, excellent condition, low mileage, spare included, $675. Horton, 883-7504.

YARD SALE, April 4 & 5, corner of Hwy. 344 & W. Church, Edgewood, saddle, tack, piano, stereo, sleeper sofa, miscellaneous. Kulawinski, 281-8694.

SOLID OAK WATERBED, queen, complete, $500; Litton Generation II microwave, $150; oak typewriter desk, $75; dining room table, $75. Yourick, 822-8148.

BOUDOIR BENCH, beige velveteen, like new, $80; hardrock maple country hutch, 45 W x 18 D x 70 H, $300. Romero, 821-1924 after 5 p.m./weekends.

DROP-LEAF TABLE, Ethan Allen, solid maple, 2 leaves, $300; 2 antique oak chairs, make offer; framed Japanese print, $10. Krahling, 268-8126.

BABY FURNITURE: matching set crib, cradle, dresser, changing table, also high chair, electric swing, more, all excellent condition. Cieslak, 294-2383.

REDWOOD CHAIRS (2), chaise lounge, small benches (end tables), new cushions, $60/all. Carlson, 897-1850.

ANTIQUES: 9-drawer cherry desk, $250; unique porcelain gas cook stove, $250; wrought-iron bed w/new full foundation, $250. Sisneros, 899-8048.

REFRIGERATOR, $350; dresser & twin or double bed, $275; love seat, $50; rocker, $50; bookcase, $35; dinette set, $50. Drebing, 293-3335.

FIBERGLASS CAMPER SHELL, w/locking back door, tinted windows, boot, 6 mos. old, excellent condition, was on Isuzu Pup, $550. Sanchez, 831-0515.

AEROBIC SHOES, new, mid-top, Ryka 770, size 5-1/2, white w/hot-pink trim, for high, low, or bench/step aerobics, $50. Monaco, 293-2754.

APPLE IIe COMPUTER w/monochrome monitor, Epson printer, miscellaneous software, in good condition, $300/all. Torres, 828-1679.

EXERCISE BICYCLE, $50; reconditioned Hoover vacuum cleaner, w/attachments, $35; mini-trampoline, $10. Morris, 292-5112.

GARAGE SALE, April 4, 8105 Palo Duro NE, dining room table, cedar chest, Victorian rocker, picnic table, bedding, much more. Vandetti, 299-2318.

DAISYWHEEL PRINTER, 36 cps, parallel, Data South (Brother), sheet feeder, cable, switch box, original boxes, manuals, $250 OBO. DeLand, 271-2129.

AT&T PC, 640K RAM, 10-Meg. HD, floppy, mono, some software, $600; computer desk, w/hutch, $100; $675/both. Warner, 294-2639.

ENCYCLOPAEDIA BRITANNICA, w/assorted updating annuals & dictionary, $700 OBO. Misak, 892-3033.

MICROWAVE OVEN, Litton, digital, 1.2 cu. ft., good working order, $125. Miller, 275-2231.

TRANSPORTATION

'84 FORD F-150, 4-spd., 6-cyl., 4K miles on new engine, $4,000 OBO; dune buggy, 1600 Volkswagen, w/trailer, $1,800. Gabaldon, 292-7340.

'80 PRINDLE 16 CATAMARAN, all Harken, double trapeze, 7:1 mainsheet, new trampoline, 4 sails, cover, garaged, excellent, $1,400. Murata, 881-8459.

'77 VOLKSWAGEN RABBIT, good body, new tires, runs fine, $900 OBO. Miller, 292-5634.

'77 CHEV. BLAZER, Cheyenne model, AT, nice interior, good body, $2,950 OBO. Scrivner, 299-0356.

'85 PONTIAC GRAND AM; '82 full-size Ford Bronco; both priced below blue book. Richards, 281-9471.

'89 DAIHATSU, like new, 45-mpg, 5-spd., AC, rear window defogger, 42K miles (all highway), $4,000. Cole, 281-9873.

'77 GMC MIDAS MOTORHOME, 19-ft., self-contained, 350 engine, 6 new tires, great condition, $7,500. Miller, 281-4004.

RALEIGH GRAND PRIX BICYCLE, 10-spd., 27-in., new tires, great condition, $100. Hesch, 256-0758.

REPOS: '89 Ford F250, 41K miles, AM/FM cassette, AC, PW, PL, cruise; '63 Chev. Impala SS; bids accepted through April 7; we reserve the right to refuse all bids; subject to prior sale. SLFCU, 293-0500, ext. 344, ask for Pat.

'83 WINNEBAGO LESHARO MOTORHOME, diesel, 22-mpg., new tires, 30K miles, S.4, S.C., 20-ft., $7,900.OBO Babcock, 299-3121, leave message.

'81 SUZUKI 450, good condition, 6-spd., new chain, extras, $600. Finch, 281-8141.

'87 CHEV. VAN 20, Regency conversion included, rear air, 65K miles, new tires, brakes, shocks, etc., $11,750 NADA. McEwen, 271-1776 after 5:30 p.m.

'85 MERCURY MARQUIS BROUGHAM, 3.8L V-6, AT, AC, tilt, cruise, all power, $2,000. Schindwolf, 831-1940.

CENTURION ACCORDO BICYCLE, 19-in. frame, 12-spd., touring bike, like new condition, $125. Prew, 296-3815.

'81 HONDA PRELUDE, driveable, good engine, body damage, make offer. York, 828-9505.

'85 TOYOTA HUNTSMAN MOTORHOME, 24K miles, new tires, many extras, excellent condition, $15,000. Wintersberger, 294-1289 after 5 p.m.

PEUGEOT 10-SPD. BICYCLE, excellent condition, $100 OBO. Clark, 281-1243.

ALUMINUM DEEP-V BOATS: 14-ft. Naden, $500; 12-ft. Larson, $300; 9.9-hp Evinrude outboard, $400. Holmes, 292-0898.

'89 FORD MUSTANG GT, loaded, new tires & battery, $9,500; '67 VW Rabbit, 67K miles, $2,500 OBO. Martin, 294-2863 after 5 p.m.

'87 DODGE DAKOTA, V-8, 5-spd., AM/FM, AC, excellent condition, $7,500. Dillon, 877-6795.

BIANCHI BROADWAY ROAD BIKE, 12-spd., many extras, $150; Nishiki 10-spd., $75; both recently tuned up. Crego, 292-0266.

'79 FORD LTD, 302 V-8, 4-dr., AT, AC, PS, AM/FM cassette, maintenance records, $1,100. Eaton, 299-7271.

'82 DATSUN, needs transmission, asking $500. Rice, 842-9457 after 5 p.m.

'75 DODGE PICKUP, 1/2-ton, 318 V-8, 3-spd., w/hitch, faithful, runs well, $900 OBO. Krumel, 281-4406.

'73 OPEN-ROAD MOTORHOME, A-Model, 21-ft., 350 Chev., 37K miles, all power, self-contained, garaged, awnings, special compartments, $6,950 OBO. Ré, 298-0290.

'88 DODGE DAKOTA, 2 x 4, 3.9L V-6, PS, PB, AM/FM tape, 5-spd., 8-ft. box, $5,500. Eley, 255-2617.

'81 YAMAHA 550 MAXIM MOTORCYCLE, "Pocket Rocket," burgundy, 8K miles, original owner, excellent condition, well cared for, $950. Bryan, 271-2102.

'82 HONDA ACCORD LX, 3-dr. hatchback, w/louvers, AC, AM/FM cassette, brown, original owner, great condition, $2,200. Monaco, 768-6140 or 293-2754.

'90 FORD MUSTANG GT 5.0, titanium gray, loaded, AT, 17K miles, extended warranty, pristine condition. Ney, 298-6329.

'86 FORD BRONCO II XLT, 4x4, EFI, V-6, 5-spd., AC, PS, PW, PL, AM/FM cassette, $5,700. Seidel, 298-1791.

'77 CHEV. NOVA, 100K miles, 6-cyl., AC, rusty but trusty, $750 OBO. Weber, 268-1195.

REAL ESTATE

2-BDR. TOWNHOME, excellent condition, 1,350 sq. ft., 1-3/4 baths, 2-car garage, 8-1/2% assumable non-qualifying loan, Indian School & Tramway, $91,500. Garcia, 293-2810.

1/4-ACRE LOT, custom area, NW Albuquerque, $30,000. Mazze, 299-4568.

3-BDR. HOME, 1-3/4 baths, barroom, extra-large utility room, garage, pitched roof, 1,560 sq. ft. Gabaldon, 292-7340.

3-BDR. HOME, 2 baths, excellent condition, new carpet, beautiful private backyard, 5 minutes from Base, $93,900. French, 294-3099.

2-BDR. TOWNHOUSE, 1 bath, assumable 8.5% loan, low down w/second, garage, laundry room, storeroom, near Base, $63,000. Cooper, 888-4150.

3-BDR. HOUSE, w/pool, 1-3/4 baths, corner lot, pitched roof, assumable FHA loan, $94,000. Copus, 281-4483.

3-BDR. MOSSMAN BRICK HOME, 2,500 sq. ft., 1-3/4 baths, approx. .4 acre, Comanche & Louisiana area, $134,000. Teta, 888-1551.

PRIVATE HILLTOP LOT, East Mountains (Steeplechase), 2-1/4 acres, utilities on lot, water membership paid, borders national forest, $30,500. Zittel, 281-1023.

3-BDR. HOME, 1-1/2 baths, approx. 1,000 sq. ft., block storage shed, 5009 Comanche NE, great starter home, $59,500. Baca, 299-4875.

4-BDR. BRICK HOUSE, 3 baths, 2-story, 1,950 sq. ft., updated, 2-car insulated garage w/extra work space, $119,900. Neal, 292-8675.

3-BDR. HOME, perfect for starter or rental, 1 bath, NE Heights, central location, $60,000. Lopez, 881-6785.

3-BDR. CUSTOM HOME, near Base, 1 acre, bonus room, 2-1/2 baths, indoor pool, $179,000. Cole, 294-7633.

WANTED

BRENTWOOD ROCKER in oak finish for baby's room. Wormington, 892-3928.

ROOMMATE, to share 3-bdr. 1-3/4-bath house near Eubank & Constitution, $300/mo. Gabaldon, 292-7340.

MOTOR for buffing & polishing single or double shaft, w/exhaust ports for dust collection attachment. Rodriguez, 296-3277 after 5 p.m.

PARENT/CHILD BACKPACKERS, to join father/sons team for easy 2- or 3-day trips (sons are ages 7 & 9). Shirley, 821-0480.

PAPERBACK BOOK, *How to Win at Pac-Man*, published around 1980. Duncan, 892-2304.

AQUARIUM TANKS, will haul off, broken glass OK or buy cheap. Finch, 281-8141.

BACKPACK FOR YOUTH (boy age 11), for overnight camping. Dell, 291-0274.

COPY OF "BIG BAND BALLROOM BASH," aired on Channel 5, to watch and return. Burke, 294-7548.

MOTORIZED CEMENT MIXER, must be in good condition, 3- to 5-cu.-ft. capacity. Kureczko, 281-8206.

GOOD USED FREE BASEBALL GLOVES for children in the Moriarty summer baseball program who need gloves. Marrs, 281-9889.

SUMMER RENTAL HOUSE, 2-3-bdr. for professor and family in the Albuquerque area. Letton, 409-845-1534.

MILLI-VANILLI CASSETTE TAPE, with songs: "Girl You Know It's True" and "I'm Gonna Miss You," in excellent condition, will pay $5. Martinez, 877-4744.

Coronado Club Activities

Last Call for Membership Drive Specials

NO TOMORROW — Today, April 3, is your last chance to take advantage of the Club's membership drive. If you sign up as a new member, you'll get two months' free membership or one free pool pass worth $25. If you're a current member and bring in a new member who joins for a year, you'll get two complimentary meals for Sunday champagne brunch. You have until 9 tonight to sign on the dotted line.

FAMILY NIGHT TONIGHT — Bring the kids out to the Club this evening, starting at 5 p.m., for a special buffet, entertainment, and kids' bingo. For children 12 and under, there's a corn dog, fries, and drink special for 99¢. Adults will have their choice of sandwich, salad, and drink for $3.75. (The menu will have other choices, too.) Bingo starts at 6 p.m. — and some lucky kid will win a gift-filled Easter basket. Special guests, the Frownbusters, will offer balloons, games, and assorted fun and excitement.

POOR BOYS NEXT WEEK — All right! The Isleta Poor Boys are coming back next Friday evening, April 10, and will be on stage from 7 to 11 p.m. The menu includes 10 ounces of filet mignon for $12.95, golden fried shrimp for $11.95, or an all-you-can-eat buffet (with poached cod and baron of beef) for just $6.95, with service from 6 to 9. Make those reservations early (265-6791).

EASTER BUNNY TIME! The children's annual Easter egg hunt and party is coming up Saturday, April 11, from 10 a.m. to 1 p.m. The Easter Bunny will visit with the kids and even have lunch with them (buffet line open from 11 to 1). The egg hunt starts at 10:30 a.m., and there will be prizes, games such as egg races and pin-the-tail-on-the-bunny, and cartoons to watch. Kids can decorate an egg at home and enter it in an egg-decorating contest.

Fun & Games

Sailboarding — The 1992 New Mexico Wind Association Sailboard Swap will be held Saturday, April 4, from 9 a.m. to 3 p.m. next to Ski Systems at Juan Tabo and Menaul. Sale item check-in is Friday afternoon, April 3. For information, call Bob Reule on 296-6006.

Cort Larned will teach an on-the-water clinic Saturday, April 11, at 11 a.m. at Morgan Lake (Farmington). A Navajo taco dinner follows the clinic. The NMWA Spring Regatta will be held at Morgan Lake on Sunday, April 12, at 9 a.m. Entry fee is $25. For information, call Larry Weirick (2514) on 281-1462.

* * *

Soccer — It's registration time for Sandia Summer Soccer. The league is co-ed and is open to all Sandia employees, contractors, and adult dependents. Games will be played at the Van Buren Middle School field just outside the Gibson gate after work on weekdays from early June through August. For more information, call Rick Hurley (2345) on 299-8401.

Events Calendar

Events Calendar items are gathered from various sources. Readers should confirm times and dates of interest whenever possible.

April 3 — Natural Selection Auction, Natural History Museum Volunteers' auction of goods and services to support specific Museum programs, music, refreshments; 6:30-9:30 p.m., New Mexico Museum of Natural History, 841-8837.

April 3-4 — Victor Mendoza, Latin jazz artist, presented by the New Mexico Jazz Workshop; 8 p.m., Woodward Hall, 255-9798.

April 3-5 — "What the Butler Saw," by Joe Orton, directed by Paul Ford, an outrageous comedy presented by the UNM Department of Theatre and Dance; 8 p.m., Rodey Theatre, 277-4402.

April 3-5 — "The King and I," musical presented by the Albuquerque Civic Light Opera; 8:15 p.m. Fri.-Sat., 2:15 p.m. Sun.; Popejoy Hall, 345-6577.

April 3-15 — Exhibit, "Played and Printed," exhibition of lithographs and monoprints made at Tamarind Institute by art students from Albuquerque, Cibola, Rio Grande, and Valley high schools, represents students' personal expressions after exploring social issues in selected art forms; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 243-7255.

April 3-19 — Exhibit, "Then and Now: Pojoaque Pueblo in Perspective," 38 historical photographs on loan from the Poeh Center at Pojoaque highlight the people and images of life at the pueblo during the last century; 9 a.m.-4 p.m. Mon.-Fri., 10 a.m.-4 p.m. Sat., noon-4 p.m. Sun.; Maxwell Museum of Anthropology, 277-4404.

April 3-May 17 — Annual Art Graduate Student Exhibition, recent and experimental studio work by candidates for master's and master of fine arts degrees from UNM's Art and Art History Department (opening reception 6-8 p.m. March 27); 9 a.m.-4 p.m. Tues.-Fri., 5-9 p.m. Tues., 1-4 p.m. Sun.; UNM Art Museum, 277-4001.

April 3-May 24 — Exhibit, "Natural Natives: New Mexico Wildflowers," photographs by Betty and Roy Stradford; 9 a.m.-5 p.m., East Gallery, New Mexico Museum of Natural History, 841-8837.

April 3-Sept. 6 — Exhibit, "Dinosaurs, Penguins, and Whales: The Wildlife of Antarctica," collection of 45 oil paintings by California artist William Stout, exhibit includes fossils, videos, an iceberg scene, and a computer simulation about the ozone hole above Antarctica; 9 a.m.-5 p.m., New Mexico Museum of Natural History, 841-8837.

April 4 — Super Saturday Concert in the Park, a celebration of Albuquerque Public School's 100th anniversary, with special guests the Green Chile Jam Band; 10 a.m.-1 p.m., free (donations accepted), La Mesa Park (7500 Copper NE), 260-2038 or 262-1581.

April 4 — Children's Pillow Concert, Chamber Orchestra of Albuquerque, designed especially for early elementary and pre-school children and their families, narrated by Ellen McCullough-Brabson, music from around the world, special guests Bayou Seco; 2 p.m., St. John's United Methodist Church (2626 Arizona NE), 881-0844.

April 4-5 — African Violet Show and Sale, sponsored by the Albuquerque African Violet Club, includes information about growing African violets; 2-6 p.m. Sat., 10 a.m.-4 p.m. Sun.; Albuquerque Garden Center (10120 Lomas NE), 296-6020.

April 4-30 — "The Dance of Creation," exhibit sponsored by the Institute of American Indian Art in Santa Fe; 8:30 a.m.-5 p.m. (artist reception 1-5 p.m. April 5), art gallery, South Broadway Cultural Center, 848-1320.

April 5 — State Tomahawk and Knife Throwing Championships, New Mexico Mountain Men competition; 9 a.m.-4 p.m., Albuquerque Museum, 243-7255.

April 5-June 21 — "WFS 17," Western Federation of Watercolor Societies exhibition, includes work of 94 artists in a variety of styles; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 243-7255.

April 5-June 30 — "Lola Alvarez Bravo: Portraits of Frida Kahlo," study of Frida Kahlo by one of Mexico's foremost photographers; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 243-7255.

April 6 — Monday Lecture Series: oral historian Greg Yawakia talks about his work on the Zuni Pueblo history project; 10 a.m., Indian Pueblo Cultural Center, 247-4907.

April 8 — Hispanic-New Mexican Bake Sale, fresh pastries baked in the Maxwell Museum's horno; 11 a.m.-3 p.m., Maxwell Museum of Anthropology, 277-4404.

April 8 — "Turquoise Trade in the Southwest," turquoise wholesaler John Chaney talks about the role traders have played in the development and expansion of Southwestern crafts; 7:30 p.m., Maxwell Museum of Anthropology, 277-4404.

April 8 — Enhancement Series Presentation: historian John Baxter discusses his book "Las Carneradas: Sheep Trade in New Mexico, 1700-1860"; noon-1:30 p.m., Albuquerque Museum, 243-7255.

April 10 — Christopher Hollyday, saxophone player, presented by the New Mexico Jazz Workshop; 8 p.m., KiMo Theatre, 255-9798.

April 10-11 — Classical Concert: New Mexico Symphony Orchestra directed by Roger Melone performs Bach's "St. Matthew Passion"; 8:15 p.m., Popejoy Hall, 842-8565.

April 11 — Ozone Depletion Lecture, C. F. Keller (Director of the Institute of Geophysics and Planetary Physics at Los Alamos National Laboratory) and Robert Tapscott (Director of the Center for Global Environmental Technologies at UNM) discuss what's happening to the ozone layer and what can be done about the problem; 10 a.m., New Mexico Museum of Natural History, 841-8837.

April 11 — "Just for Fun," New Mexico Gay Men's Chorus, program includes madrigals, a Mozart overture arranged as a tour guide to Europe, three American songs arranged by Aaron Copland, pop music including Gershwin rhythm songs, and more; 8 p.m., First Unitarian Church (3701 Carlisle Blvd. NE), 296-9215.

April 11-12 — New Mexico Cactus and Succulent Society 1992 Spring Show and Sale; 1:30-4 p.m. Sat., 10 a.m.-4 p.m. Sun.; Albuquerque Garden Center (10120 Lomas NE), 296-6020.

April 11-12 — "The Ransom of Red Chief," children's musical based on the famous O. Henry classic; 2 p.m., KiMo Theatre, 821-8055.

April 12-May 31 — "WPA Art," exhibition of paintings by Emil Bisttram, Gene Kloss, and Joseph Fleck, done for the Work Projects Administration; 9 a.m.-5 p.m. Tues.-Sun., Albuquerque Museum, 243-7255.

April 14 — Explorations in World Music Series: "Troubadours of the Yucatan," presented by Prof. Phil Bock (UNM Department of Anthropology); 7:30 p.m., Maxwell Museum of Anthropology, 277-4404.

April 15 — "Trading Posts and Transitions in Navajo Weavings," trading post owner Bruce Burnham discusses the importance of trader-weaver relationships in the evolution of Navajo weaving styles resulting from traders' market development efforts; 7:30 p.m., Maxwell Museum of Anthropology, 277-4404.

GETTING SET to board a chopper for an aerial tour of Coyote Canyon, the Solar Thermal Test Facility, and Areas 1, 3, and 5 is Dominic Monetta (middle), DoD Deputy Director for Defense Research and Engineering. Monetta, seen here with Executive VP for Programs Orval Jones (20, left) and VP for Systems Applications Gerry Yonas (9000), visited the Labs recently to learn about many of Sandia's research, development, and testing capabilities.